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THE

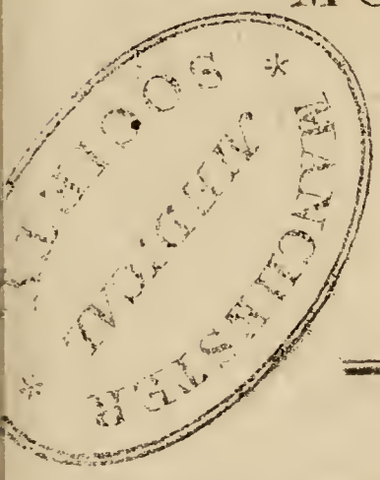
LONDON

MEDICAL REPOSITORY,

MONTHLY JOURNAL

AND

REVIEW.



BY

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THE

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No. 13. JANUARY 1, 1815. Vol. III.

HALF-YEARLY REPORT

OF THE

PROGRESS OF MEDICAL SCIENCE,

FROM JULY TO DECEMBER 1814.

"We owe all our knowledge to facts and to induction, or the art of reasoning on those facts. We need not go in search of principles; because they will present themselves, if we are capable of properly observing facts. Observations that are made with precision will lead to conclusions of equal justness; and these again will afford principles or propositions which will require no further proof." Zimmermann.

"The loss of one practical fact is a robbery on the public. It is incumbent on every one to throw his mite into the mass. Indeed it is doubtful how a man can answer to his conscience having indolently deprived the world of that, which, if communicated, might have added to the safety of a fellow creature." Dr. Clarke's *Report for Nottingham.*

The propriety, the advantage, and the duty of collecting facts, in a practical art, consisting of a series of events, many of them unexpected, some obscure, and others unintelligible while apparently isolated, cannot be too earnestly enforced. Upon observations made without prejudice, and unbiassed by preconceived opinions, must the theories of a Science be founded, which has emphatically been called the Science of Observation. Without a theory to direct practice, the art of medicine will remain precarious, fluctuating, and doubt-

ful; influenced by caprice, directed by fashion, or led by some popular artist, who is *in time* discovered very little to have deserved pre-eminence. But a theory, to be efficient and permanent, must be erected on a substantial basis of facts, clearly and unequivocally ascertained. Impressed with this truth, the page of scientific history will chiefly be devoted to the recording of observations: for, although hypothesis and conjecture may not be without their use, it is to irrefragable facts, in the present state of knowledge, that the melioration of the institutes and the improvement of the practice of medicine must be referred.

An arrangement, under distinct heads, of recent facts, and investigations founded on observation, is therefore, as influenced by this impression, the chief object of this Report. A statement of opinions, and an illustration of evanescent hypotheses, which, perhaps, after-times will only know by their being recorded here, are but secondary considerations.

Out of the satisfactory assurance, that the principle and form of this Report were generally acceptable to the Profession, has arisen the determination neither to change that *principle*, nor to alter that *form*.

ANATOMY AND PHYSIOLOGY.

In this branch of science the exertions of Mr. Brodie continue with laudable assiduity. An obscure portion of the animal system, with regard, at least, to its functions, is daily receiving, from the experiments of this ingenious anatomist, additional elucidation. The controlling power of the brain and nerves, as exercised upon every part of the animal fabric, is yet only known with uncertainty in its modes of operation; and imagination is often led to supply by conjecture the want of direct fact: but that all the actions, voluntary and involuntary, of living bodies are in some way directed and methodized by the *sensorium commune* is not to be doubted. The structure and physiology of the brain and nerves become, therefore, a point of the first importance, as illustrating the doctrine of life, and as improving the practical knowledge of the management of diseases. By taking portions of the body, and shewing, by direct experiment, the action of the nerves on the functions of those portions, Mr. Brodie is laying the foundation for a view of the whole system, direct and sympathetic, of nervous influences. And it may fairly be inferred, that, by this analytical

method, the obscurities of an interesting branch of physiology will be much illuminated. The influence of the *eighth pair of nerves on the secretions of the stomach* * has been the last object of his research.

Experiments made in 1809 had rendered it probable that animal secretions are dependent on the nervous system; and it was seen, in an inquiry instituted by Mr. Brodie for another purpose, that, although the action of the heart continued, and the circulation was maintained as under ordinary circumstances, the secreting organs invariably ceased to perform their office, when the functions of the brain were destroyed. These striking facts led to a more direct investigation of the subject. The stomach was the organ selected for the verification of this physiological phenomenon. It was known to the experimentalist, that, in dogs poisoned with arsenic, there is an exceedingly copious secretion of mucus and watery fluid from the mucous membrane of the stomach and intestines. Solutions of arsenic were therefore given to various dogs, and others were inoculated in the thigh with white oxide of this semi-metal. The stomachic ropes†, formed by the nerves of the *par vagum*, were then divided where they are situated on the œsophagus, immediately above the cardiac orifice of the stomach. The animals died in a few hours, and without an increased secretion of mucus or watery fluid in the stomach and intestines.

The result of several experiments seems to have determined, as far as the secretions of the stomach are concerned, the direct and efficient influence of the nerves on that organ.

The French physiologists have been endeavouring to ascertain, by an experimental inquiry, what parts are directly or indirectly concerned in the production of vomiting. *M. M. Majendie* and *Maingualt*, who have been principally the inquirers into the nature and mechanism of this reversed action of the stomach, hold opinions in direct opposition. *M. Majendie* asserts, that the diaphragm and abdominal muscles are the main agents in the production of vomiting, and that it may take place

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* *Phil. Trans.* Part I, 1814. *Repository,* vol. ii. p. 331.

† A laborious and disordered respiration is always produced by a division of the eighth pair of nerves, when that division is made between the respiratory organ and the brain; and as this laborious breathing occasioned an obscurity in the subsequent results, these nerves were divided, as described in the text, by which the stomach only was acted on, the respiration not being in the least disturbed.

without any contraction of the stomach. The experiments of *M. Maingault* prove as positively, in his opinion, that vomiting takes place independant of the co-operation of the abdominal muscles and diaphragm. With *M. Majendie*, the stomach was quiescent in the act of vomiting: with *M. Maingault*, the diaphragm and abdominal muscles were quiescent. In this dilemma, the Society *de l'Ecole de Medicine de Paris* directed *M. M. le Gallois* and *Beclard* to examine the subject, particularly the essay of *M. Maingault*, and report the result to the Society*.

Among the investigations of nature to which physiology has been directed, there is, perhaps, nothing yet met with more obscure and impenetrable in its process than *animal conception*, either in its ordinary effects or in its extraordinary phenomena. In the Natural History department of the preceding REPORT†, it was stated to be a fact, that, when a female of a particular breed of sheep was impregnated by a common ram, the increase resembled either the father or the mother, the essential peculiarities of the two parents never being blended. In cases of twins, one lamb resembled the ewe and the other the ram. This subject of resemblances imparted by parents to their offspring, has been prosecuted, as it applies to the human race, by Professor Carlisle, in the history of a family having hands and feet with supernumerary fingers and toes‡. Some personal peculiarities exist in every individual, which remain unnoticed until they are called forth for the purpose of identity: but there are others so remarkably deviating from the common course of nature as always to attract observation. The Sacred Writings give an example in the giant of Gath; Haller, in his *Elementæ Physiologiæ*, collects many instances; the Sedigitii and Flacci

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* In the second volume of the *Repository*, p. 155, our readers will find the report of *M. M. le Gallois* and *Beclard*, to which they are referred for a particular detail of the result of their examination. Although it be evident, that the mechanism of the parts concerned in the production of vomiting, and their *modus operandi*, are desirable to be known as natural facts, yet we cannot miss this opportunity of again reminding our readers, that some incidents have lately arisen that seem to prove this reversed action of the stomach to possess, when carried to a certain degree, curative powers of an extraordinary nature, and which, at least, deserve a fair examination. For a statement of some of these, see *Repository*, vol. ii. p. 389.

† *Repository*, vol. ii. p. 27.

‡ *Phil. Trans.* Part I. 1814, p. 94.

among the Romans were remarkable for supernumerary fingers and pendulous ears. In the lower orders of animal life, peculiarities of form, produced under the commanding influence of man, are very numerous: and the means employed for the production of these peculiarities are connected with domestication. As adding to the stock of facts, this investigation may be useful; but how far such facts will elucidate or explain any physiological principle, is yet problematical. Among the most extraordinary, and, perhaps, extravagant operations of nature, as relates to the work of generation, the fact ascertained by Mr. Highmore* seems particularly to claim attention. That a male human being should have a distinctly formed fœtus lying in his abdomen, and attached, by something like a placenta, to part of the intestinal canal, would be credited only from ocular demonstration. That this phenomenon has occurred more than once, is, however, quite certain; and can be rationally explained. In the instance related by Mr. Highmore†, the form of the fœtus was more perfect, the size larger, and the age of the person in whom it was found more advanced, than in any other recorded case. But an opinion has been held, that this substance, though resembling a fœtus, was no more than a common sarcomatous tumour under an uncommon form. This infers, that it never possessed a proper fœtal life, or had a circulation distinct and independant of that of the person in whom it was found. By an examination of its internal structure, this would instantly be determined, were such an examination permitted by the College of Surgeons of London, in whose Museum it is deposited. If a heart and proper system of blood-vessels were discovered, no doubt would remain of its having once had the fœtal and independant life: but if it possessed no other system of blood-vessels than what were derived from the arteries and veins of the abdomen in which it was found, then unquestionably it should be considered to be no more than an uncommon tumour‡.

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* *Repository,* vol. ii. p. 173.

† The verity of this has been proved by the exhibition of the fœtus to most of the medical practitioners in London, and by the evidence of persons who saw it removed from its place in the abdominal cavity, and from its attachment to the duodenum of a youth sixteen years old.

‡ The history of this monstrosity about to be published by Mr. Highmore, we anticipate, will very fully elucidate its peculiarities, and remove many doubts which yet exist. When that history comes

The demonstrative Course of Lectures by Dr. Spurzheim on *Gall*'s physiognomonical system may deserve notice here, as one of the novelties of the present period. Most, perhaps all, the readers of this REPORT are well acquainted with the singular notions of Dr. Gall respecting the form of the cranium, as indicative of the mental powers, the moral dispositions, and the corporeal vigour of every individual. Dr. Gall, indeed, went much further, and stated, that the faculties of the mind, good and evil propensities, &c. were shewn, as to their degree, by certain portions of the cranium being marked externally in a manner that informed those who were properly instructed in the science, of the actual state of intellect, and real dispositions of persons. The object of Dr. Spurzheim is to demonstrate the truth of a system which has been considered by many as a play of the imagination, a delusion totally unfounded in the veracity of nature. The subject is curious, however, and well deserves an inquiry that may establish its pretensions or prove that it deserves no regard.

MATERIA MEDICA, CHEMISTRY, BOTANY, AND NATURAL HISTORY.

I. MATERIA MEDICA and PHARMACY.—The attempt to ascertain the medicinal properties of substances, by their action on dead animal matter, once carried to an extreme, especially by the French, has again been revived in *Recherches sur l'Antiseptricité de quelques Végétaux indigènes, comparée à celle du Quinquina, suivies d'un aperçu sur l'Analyse Chimique de ces Substances. M. Julia*, operator and professor of pharmaceutical chemistry at Montpellier, the author of the above, has published a suite of experiments to shew the relative quantity of the antiseptic principle in Cinchona, Anthemis *nobilis*, Artemisia *vulgaris*, Æsculus *hippocastanum*, Gentiana *lutea*, Chironia *centaurium*, and Quercus *rubor*. These experiments were designed to determine which of these substances would preserve dead animal matter the longest; and the deduction was to shew their febrifuge virtue, or their power of resisting fever by their action on the living fibre. But the substances to be acted upon, dead and living animal fibre, are under circumstances so widely different, that an inference from one to the other will scarcely be admitted. Whether the material that preserves a piece of dead sheep's flesh the longest from putrefaction, will prove the most powerful febrifuge, cannot be demonstrated by any

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to our hands, we shall promptly give a view of its facts, and a full analysis of every opinion or hypothesis it may contain.

chemical process. Yet the results of this inquiry are not without interest*.

The once notorious *Eau Medicinale* has again had an ephemeral notice directed to it, by the assertion that the *Colchicum autumnale* is the active material in it. Whether this be a discovery of the efficient substance in this nostrum or not, the public is indebted to the gentleman who has thus fairly explained what he thinks to be a discovery †.

The use of charcoal powder, as a substitute for cinchona in intermittent fever, deserves attention, from the positive manner in which its febrifuge properties are asserted, and from the authority on which the facts rest. A drachm of powdered charcoal was given every hour during the intermission; and the quantity of the medicine required for arresting the paroxysms was about two ounces. For this discovery, the profession is indebted to the Italian physicians; and the island of Sicily has been the field of their operations. With a *Dr. Calcagno* the idea of employing this substance in intermittents seems to have arisen; and he published the result of his experience in a letter *sull' uso interno del carbon di ligno.* Other persons in the medical profession pursued the same course, and with equal success. *Dr. Nicosia*, *Dr. Burza*, and *Signor Maccadino* are mentioned as having been equally successful as the discoverer. The English practitioners in Sicily countenance, at least, its use in this form of fever. Since the employment of common carpenter's glue for the cure of intermittents, by the Italian, French, and German physicians, on evidence ‡ certainly as positive as that which now supports carbon, the effects of this substance will be admitted with caution.

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* *Repository,* vol. ii. p. 427.

† Two ounces of the root of *Colchicum autumnale* cut into slices and macerated in four ounces of proof spirit until the spirit is fully imbued with the properties of the *Colchicum,* is said to be the exact composition of the *Eau Medicinale.* We do not question but a tincture made with the root of this plant, will possess much activity. It will require however great care in the preparation, as some parcels of the root will be inert, while others will be extremely potent; depending on the soil in which they are produced, and on the length of time they have been kept. Different specimens of the root will therefore differ much in strength.

‡ *Sequin* in France, *Coutieri* in Italy, and *Bischoff* in Germany, supported by a relation of facts, by analogies and by reasoning, the opinion that animal glue possessed all the febrifuge properties of the Cinchona. For a time this had its advocates, and many then were the cases of intermittents cured by it; but the febrifuge reputation of glue has long since vanished.

A decoction of the pomegranate root has been given in India, as a remedy for tœnia, with, it is said, invariable success; and in America, Dr. Blanchard has found in the seed of the *Delphinium consolida*, a powerful and efficacious remedy in spasmodic dyspnœa. A tincture, made by infusing an ounce of the bruised seeds in a pint of proof spirit, is given in doses of ten drops thrice a day, cautiously increasing the quantity. It nauseates, produces diarrhœa, perspiration, and an increased flow of urine*.

II. Chemistry. — The discovery of new materials, or the changes in form and disposition of the old, are constantly affording some novelty in the history of the progress of this science; nor is the present period without the interest which these circumstances afford.

The new substance discovered by *M. Courtois*, denominated *Iodine*, and which becomes a violet coloured gas by heat, has been elucidated by Sir H. Davy†. This able chemist is convinced that *Iodine* is a new substance, undecompounded in any of the circumstances to which he has been able to expose it; and that the acid formed in processes upon it, is not muriatic acid, but a new acid possessing a striking resemblance to that body. *Iodine*, in its specific gravity, lustre, the high number in which it enters into combination, and in colour, resembles metals; but in all its chemical agencies, it is more analagous to oxygen and chlorine: it is a non-conductor of electricity, and possesses, like these bodies, the negative electric energy with respect to metals, inflammable and alkaline substances; and hence, when combined with these in aqueous solution, and electrized in the voltaic circuit, it separates at the positive surface. It is not decomposed when voltaic sparks are taken in its gaseous state from ignited points of charcoal.

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* The D. *consolida* is a species of a genus of plants, many of which possess medicinal properties. The D. *exaltatum*, D. *staphisagria*, are known to be acrid and stimulating. The *consolida* here noticed, is the *corn larkspur* of England, *Pied d'Allouette* of France, *Rittersporn* of Germany, *Ritterspore* of Denmark and Sweden, *Speronella* of Italy, and *Espuela de Cabellero* of Spain. As it seems to be a plant of considerable potency, with a view to excite attention to it, we insert some of its places of growth, which are generally corn fields: — Lower road between Cambridge and Gogmagog Hills, Swaffham field, Hinton, Trumpington, and Feversham, Cambridgeshire. Is the species mentioned by Dr. Blanchard the American *exaltatum* rather than the European *consolida*?

† *Phil. Trans.* Part I. 1814.

It produces little heat, and seldom light, in entering into combination; agrees with chlorine and fluorine in forming acids with hydrogen; and oxygen in forming an acid with chlorine. It has a stronger attraction for most of the metals than oxygen has; and its saturating and neutralizing powers appear to be greater than those of oxygen, and less than those of chlorine.

The denomination *Ione* has been proposed in France for this new substance, from *ἴον*, *viola*, as agreeing with its colour in the gaseous state; and its combination with hydrogen has been named hydro-onic acid. But as this term would lead in English to confusion in its compounds, which would become Ionic and Ionian, Sir H. Davy has proposed *Iodine*, (*ιώδης*, *violaceous*,) by which the confusion will be avoided, and the name be more analogous to chlorine and fluorine. *Iodine* is procurable from a variety of substances; but the method proposed by Accum to procure it from the spent soap lees of those soap manufacturers who use kelp, seems preferable to any other. Boil these soap lees for a few minutes with quick lime, then strain and mix with sulphuric acid in excess; evaporate the liquor to the consistence of syrup, and distil or treat in a flask or retort with red oxide of lead or sulphuric acid. By this process *Iodine* will be obtained in great abundance.

In attempting to decompose fluoric acid, Sir H. Davy came to the probable inference, that the pure liquid fluoric acid consists of hydrogen united to a substance, which from its strong powers of combination, has not yet been procured in a separate form; but which is detached from hydrogen by metals, and when in union with the bases of boracic acid and silica, forms the fluo-boracic and silicated fluoric gases. Attempts since made by this chemist to decompose the principle in the fluoric acid, "separated at the negative surface in voltaic combinations, have been unsuccessful;" but the experiments connected with this attempt, excite the expectation that many subtile bodies remain yet to be discovered, and that first elements are not yet developed.

These facts led this excellent chemist to the reflection, "that, as neither oxygen, chlorine, nor fluorine, although not asserted to be elements, have not yet been decomposed," it is not improbable, as the investigation of nature proceeds, more subtile bodies belonging to this class will be discovered; and perhaps some of the characteristic differences of those substances which apparently give the same products by analysis may depend on this circumstance. The conjecture seems worth hazarding, whether the carbonaceous matter in the diamond may not be united to an extremely light and subtile principle

of this kind, which has hitherto escaped detection; but which may be expelled, or newly combined during its combustion with oxygen. "That some chemical difference must exist between the hardest and most beautiful of the gems and charcoal; between a non-conductor and a conductor of electricity; notwithstanding the elaborate experiments that have been made on the subject, it is scarcely possible to doubt." This is the language both of science and common sense, and is equally creditable to the understanding and acquirements of Sir H. Davy. It seems reasonable to expect, he further adds, that a very refined and perfect chemistry will confirm the analogies of nature, and shew *that bodies cannot be exactly the same in composition or chemical nature, and yet totally different in all their physical properties.*

The experiments of Klaproth for ascertaining the solubility of white arsenic in water, are particularly interesting as applicable to the preparation of a valuable medicine, the *liquor arsenicalis.* The results shewed, that twelve grains only of arsenic were dissolved in ten ounces of water at the temperature of 59° of Farenheit in twenty-four hours:—that two hundred grains of the pulverized oxide boiled for a quarter of an hour in four ounces of water, experienced a solution of seventy-seven grains and three quarters:—that boiling water standing till it was cold, retained in solution one grain of the oxide to thirty-three grains of water*.

The analysis of the waters of Rorsdorff†, the elaborate inquiry into the composition of alcohol and sulphuric æther by De Saussure, and other interesting facts in this branch of chemistry, ought to be noticed, but the necessity for compressing

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* *Repository,* vol. ii. p. 250.

† *Ibid.* vol. ii. p. 252.—The mineral water lately discovered near Gloucester, is undergoing an analysis by Mr. Accum; the results of which will soon come before the public. "This water, when fresh drawn from the pump, is clear and sparkling; emits a sulphureous smell, and has a brackish taste. Lime water renders it turbid, and it reddens with tincture of litmus. When treated with a few drops of nitric acid, and afterwards with prussiate of potass, it assumes a beautiful green colour, and lets fall a fine purple precipitate. With Tinct. of galls, it becomes first of a dingy green, and on standing a day or two, turns almost black, and exhibits a shining pelicle on its surface. It converts the tracings made by nitrate of mercury to a light yellow. It holds in solution large quantities of purging salts. There is reason to believe it contains some acid more fixed than the carbonic. This water exudes through a thick stratum of blue clay, which is diffused through a great part of the Vale of Gloucester."

this Report within moderate bounds, compels a reference to the pages of the preceding volume of the Repository. The progress of animal chemistry has however a claim that cannot be superceded by a convenience.

M. le Montegre one of the editors of the *Gazette de Santé*, has instituted a course of experiments for ascertaining the true nature and properties of the *Succus gastricus*; and by these he believes he has arrived at the following facts. First, the gastric juice invariably found in the stomach in a greater or less quantity after fasting, is nothing but saliva mixed with unctious matter, and the aqueous vapour found in every part into which the exhalents penetrate. Second, the gastric juice is not a solvent *sui generis*; it is not capable either of preventing the putrefaction of animal substances, or of effecting artificial digestion. Third, wherever digestion is going on, there an acid is produced, the elements of which are furnished by alimentary substances. Fourth, the gastric juice or the saliva, *which is considered to be the same substance, by M. le Montegre*, being a liquid susceptible of digestion, undergoes the same changes in the stomach as other alimentary matters, and occasions the generation of the same acid. Fifth, this acid seems to have a near affinity to the acetic, but it is stronger. These results throw a degree of doubt upon some received opinions, especially that which holds the solution of the food in the stomach to be effected by a peculiar fluid, the *Succus gastricus*; and even question the existence of that fluid, the activity of which has been believed, on very high authority, to dissolve the stomach itself.

M. Vogel has ascertained, that the blood, the bile, and the urine, contain sulphur in the state of sulphuretted hydrogen; and has rendered it probable, that this substance exists in all the animal fluids. The analysis of human bone, by Professor *Hildebrandt* of Erlangen, shews, that this part of the animal frame contains no magnesia*.

The properties of electricity and galvanism in their relations to chemistry, are now becoming important in the history of nature. The Bakerian lecture on some electro-chemical phenomena, by Mr. Brande†, forms an interesting feature in this branch of science. It has been ascertained by Sir H. Davy, that when compounded bodies, capable of transmitting electricity, are submitted to the operation of the voltaic pile, their proximate and ultimate elements are separated with uniform phenomena; that acids are attracted toward the positively electrified surface; and that alkaline and inflammable substances take an opposite direction, and collect at the negative pole.

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* *Repository*, vol. ii. p. 81. † *Phil. Trans.* Part I. 1814.

Of the ultimate chemical elements of bodies, the greater number exhibit the last-mentioned character, and a few only appear to be attracted toward the positive extremity of the voltaic instrument; and as bodies possessed of dissimular electrical powers attract each other, it has been concluded, that the inherent electrical state of the former is positive, that of the latter, negative. These chemical effects were at first regarded as peculiar to the voltaic pile, and were considered to depend upon the operation of a new agent, termed the galvanic fluid, until Dr. Wollaston, in the year 1801, succeeded in imitating these effects by means of the electrical machine, and thus experimentally demonstrated the identity of common and voltaic electricity. More recent investigations have fully established the correctness of these views, and have shewn that the different action of the voltaic pile and the electrical machine, depends chiefly upon the quantity of electricity in the former being great, while its intensity is inconsiderable, and vice versa."

It was discovered by Mr. Cuthbertson, that when the flame of a candle is placed between two surfaces of opposite electrical states, the negative surface becomes most heated. In the *Annales de Chimie* for 1809, *M. Erman* had shewn, that certain substances are unipolar, or only susceptible of transmitting one kind of electricity; and Sir H. Davy considers the result of Mr. Cuthbertson's experiments to depend on this. Mr. Brande believes, that this phenomenon admits of another explanation, and that it is connected with the chemical nature of the substances employed. To prove this many different substances were submitted to the electric influence, and the results are related in this lecture. The attraction of acids by the positively electrified surface, and of alkalies and inflammables by the negative, seemed to furnish evidence of the inherent electrical states of matter; and the identity of the chemical powers of common and voltaic electrity were demonstrated. The known accuracy of Mr. Brande, his knowledge of the subject, and his talent for observation, give force to his conclusions.

The multifarious objects, the elaborate research, and the varied combinations found in chemistry, require every aid that the ingenuity of man can devise to simplify the complexity, and facilitate the comprehensibility of this science. In these points Dr. Wollaston has done much by his *Synoptical Scale of Chemical Equivalents**, by which is shewn at one view the true weights of the several ingredients in a great variety of salts, the actual quantities of the re-agents that may be used, and the precipitates that would be obtained by each.

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* *Phil. Trans.* Part I. 1814.

III. Botany.—The Dissertation *de Antherarum Pulvere* of *Koelreuter* is the most decided proof of the progress of botanical science within the period allotted to this Report. The importance of a subject which has previously occupied Malphigi, Grew, Geoffroy, Verdries, &c. cannot be doubted; and numerous facts, agreeing with extensive analogies in nature, will justify the conclusion, that the energies of the *pollen* of plants is of the first importance in the œconomy of vegetation. Whether there are permanent forms in the particles of this *pollen* or anther powder in specific plants, according with the simplicity of nature; or whether these forms be liable from accident or caprice, to variations not to be accounted for, it is the object of *Koelreuter* to determine. In the pursuit of this object, he has submitted a great variety of plants to a minute microscopic examination; has described the forms of the particles of the pollen in each, and has arranged them in classes according to their agreement in this particular. He has also explained the circumstances that induced the learned *Ludwig* to doubt if the anther powder had a specific determinate form peculiar to any plant*.

An examination of some properties appertaining to the *Equisetum arvensis*, by Smolousky, has added to the facts in this branch of science. He found that the *tubers* attached to the root of this common plant possessed, in their parenchyma, a farina similar to the flower of wheat, and that this might be converted into a starch greatly superior to that made from the potatoe†. The natural, medical, and economical history of the *Solanums* has been improved by *Dr. Michael Felix Dunal* of Montpellier, who has ascertained the medicinal and deleterious property in many species of this genus with a precision not heretofore effected‡.

IV. Natural History and Experimental Philosophy.—In the Natural History of the Earth, and its productions, there is nothing more extraordinary than the fossilized remains of animals, none of which are now found to exist in a living state. To add to the difficulty arising from this source, it is fully understood, that among these fossilized remains, not a vestige of the human race is to be found. The conclusion from this by *Cuvier*, and other learned naturalists, is, that man did not exist till posterior to the time at which those animals lived. But a fossil human skeleton having been recently found in the island of Guadaloupe, the general inference is, in a mea-

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* *Repository*, vol. ii. p. 343.

† *Ibid.* p. 83.

‡ *Ibid.* p. 169.

sure, impugned. For if one fossilized human skeleton was found, many might exist, though not yet discovered. This fact was deemed of sufficient importance, by Mr. Kœnig of the British Museum, to demand a distinct dissertation, which has been admitted into the annual volume of the *Royal Society**. In this paper Mr. Kœnig touches on the history of facts respecting organic remains, the opinions of writers, and the advantages that will arise to geology by the investigation and study of this subject. Upon the question of the existence of human fossilized remains, he observes, "all the circumstances under which the known depositions of bones occur, both in alluvial beds and in the caverns and fissures of Fletz limestone, tend to prove that the animals to which they belonged met their fate in the very places where they now lie buried. Hence it may be considered as an axiom, that man, and other animals, whose bones are not found intermixed with them, did not coexist in time and place." The same mode of reasoning would further justify the conclusion, that if those catastrophes, which overwhelmed a great portion of the brute creation, were general, as geognostic observations made in various parts of the world render probable, the creation of man must have been posterior to that of those genera and species of mammalia which perished by a general cataclysm, and whose bones are so thickly disseminated in the more recent formation of rocks. The many instances of Anthropolithi described by authors, from *Scheuchzer*'s famous *Homo diluvii testis et Θεόσκοπος* to *Spallanzani*'s mountain of bones in the island of Cerigo, have all proved not to be what they were taken for by the ignorant in osteology, and cannot, therefore, be adduced in objection to the above reasoning. Still less are the incrustations of human bones (from the once celebrated skeleton preserved in the Villa Lodovisi at Rome, to the skull found in the Tiber, and preserved in the British Museum) calculated to subvert it; nor is the hypothesis likely to be greatly invalidated by the skeleton found in Guadaloupe, with whose history, however, several circumstances are connected which appear to preclude the probability of a very recent deposition, or which, at least, require further elucidation, before its relative age can be pronounced upon with any degree of confidence.

These human bones from Guadaloupe being unquestionably the only bones we are acquainted with that have ever been found embedded in a hard stony mass, that does not appear to belong to common stalactical, calcareous depositions, have an interest connected with them greater than attaches to other fossil remains.

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* *Phil. Trans.* Part I. 1814, p. 107.

Mr. Kœnig to his elaborate description has added a plate elucidative of this skeleton.

The animalcular hypothesis which once attracted the attention and received the support of many naturalists and physicians, perhaps, on that account only, deserves some regard. Although adopted by Linnæus, and a numerous train of minor name, as the cause of fever, syphilis, and various other diseases, yet this hypothesis has been long relinquished; but, as productive of some diseases of the skin, it still retains a degree of credit. The *Theatrum Insectarum* of Moffet probably first gave it some degree of importance in this country. The discovery of the Italian physician Bonomo, as related by Mead, and the later account of the Occoe of Madeira, by Dr. Adams, have contributed to support the opinion, that a species of the extensive genus Acarus did really produce a disease having the character of scabies. From this circumstance the trivial name *Scabiei* has been given to one individual of this genus. The supposed discovery made by *M. Galés* has led to further investigation of the history of the *Acarus scabiei;* but it seems that the naturalists and physicians of the Continent have, with the exception of *M. Galés*, in vain sought for the insect: in particular *Dr. Suriray* of Havre has attended minutely to this subject; and has not only been unable to find the *Acarus scabiei*, but objects, with Murray, to its existence in the pustules of itch as their cause*.

An Essay on Dew, and the appearances connected with it, by William Charles Wells, M. D. is an elaborate investigation of a natural occurrence, upon which almost every rank in life feels interested. The salutary or deleterious effects supposed to be produced by dew, are connected, probably, with many popular superstitions, which Dr. Wells' Essay will dispel; for it is a clear and satisfactory history of a natural phenomenon.

Mr. Singer's Elements of Electricity and Electro-Chemistry contain a full explication of the elementary parts of these sciences; it will be especially interesting to the practitioners of medicine, in the chapter treating of the connection of electricity with medicine and natural history.

THEORY AND PRACTICE OF MEDICINE, SURGERY, AND MIDWIFERY.

I. THEORY AND PRACTICE OF MEDICINE. — A general *Toxicologia*, or Treatise on Mineral, Vegetable, and Animal Poisons, by *M. Orfila*, a Spanish physician, is, possibly, the most comprehensive, useful, and interesting production that

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* *Repository*, vol. ii. p. 165.

can be noticed in this department of the present Report*. The plan and execution of this work, as applicable to physiology, pathology, and forensic medicine, is of a quality to command respect. In a preface and introduction, the learned author presents an exposition of the plan of his work, points out the objects of a *Toxicologia*, their connection with science in general, and the means by which a knowledge of them may best be acquired. When treating of poisoning by hydrargyrus muriatus, the author states a new fact of the utmost importance; viz. that *albumen*, in the form of white of egg, decomposes corrosive sublimate with great facility. Upon this fact albumen was resorted to as a remedy where this poison had been swallowed, and with beneficial results. It was given diluted with water, and with great effect in cases where the experiment was made on dogs, to ascertain its efficacy. It cannot be overlooked, that when dogs are poisoned by another mineral, the white oxide of arsenic, there is an extraordinary secretion of mucus in the stomach†. Whether this be an effort of the *vis medicatrix* to decompose that poison by an increased secretion of mucus, as albumen does corrosive sublimate, may be worthy of inquiry. If the fact were known, that the animal continued alive longer under the influence of the arsenical poison when this secretion was uninterrupted, and died sooner when the branches of the *par vagum*, supplying the stomach with nervous energy, were divided, the secretion of mucus being then suppressed, a datum would be afforded favourable to the developement of truth. It is a fact of equal importance, that *sugar* is a certain antidote against the poisonous effects of verdegris. These two truths, promulgated by *M. Orfila*, never could have been arrived at by our powers of reasoning. In this country, where medical jurisprudence is but just becoming a branch of medical education, the illustrations offered by *M. Orfila* must be acceptable. These, with the re-publication of *Dr. Samuel Farr*'s little tract, and the course of lectures on the subject now delivering in London by Dr. Harrison, may inform the English practitioners in an essential department of the profession, and tend to raise their respectability, by rendering their evidence on various forensic questions more consonant to reason and science.

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* Of the elaborate *Traité des Poisons tirés des Règnes Minéral, Végétal, et Animal, ou Toxicologie Générale sous les Rapports de la Physiologie, de la Pathologie, et de la Medicine Legale,* par M. P. Orfila, the *Repository,* vol. ii. p. 317, et sequent, has given a perspicuous Analysis; which it is intended to continue in the present volume.

† See the statement of this fact by Mr. Brodie, p. 3, of this *Report.*

The *Pathological Researches* of *Dr. J. R. Farre* claim a distinguished notice in the history of medical science. His object is to improve by anatomy the diagnostic part of medicine; and it is his intention to extend his inquiries to the diseases of all the internal organs. At present his views are confined to the heart, the alimentary canal, and the liver. One fasciculus of the morbid anatomy of the liver has been published: the subject of the present notice is an essay on mal-formation of the human heart. The mal-formations of the heart or arteries which occasion a mingling of black with red blood, and those that only impede the circulation of the blood, are treated of in this essay, which is illustrated by well-executed plates. The method pursued by Dr. Farre promises many advantages. When preceded by clinical observations, it affords the means of distinguishing between diseases of function and diseases of structure. It is capable of introducing great simplicity into nosological arrangement. By rejecting the artificial forms, and studying only the natural or true species, it facilitates the tracing with precision the respective stages of diseases, and teaches to separate the characteristic from the anomalous signs; thus establishing a more accurate diagnosis, and leading to an adaptation of the treatment not merely to the name, but to the form and stage of the malady.

The acknowledged still existing confusion and incertitude connected with all cuticular affections, but which would possibly have been removed had Dr. Willan lived to finish his great work on this subject, gives to his posthumous essay on *Porrigo* and *Impetigo*, edited by Mr. Ashby Smith, no small importance.

Rabies contagiosa is yet so little under the controul of any mode of treatment, and is possibly often so confounded with tetanic or simple hydrophobia, that every attempt to explain the true nature of the train of symptoms which distinguish the simple from the specific disease, deserves the serious regard of the profession. In this view, the cases collected by Dr. Parry of Bath, inasmuch as they go to develope the characteristic marks of the specific disease, ascertaining its relations to tetanus, hysteria, or other affections generally denominated nervous, must be placed among the most valuable, as a compilation of facts, of the productions which have appeared in the preceding six months. The principal objects of this volume are the pathognomonic symptoms of Tetanus and Rabies; the length of time which elapses between the infliction of the bite, and the accession of the disease in *Rabies contagiosa;* the relative number of cases of Rabies that occur

among those bitten; the species of animals susceptible of receiving the disease, and capable of communicating it*; an examination of its spontaneous origin in the dog; an investigation of the treatment, especially by blood-letting, and its want of success in this country; with the mistake of tetanic for specific hydrophobia, and its consequences as operating on opinion, respecting cured cases. The observations on Rabies by Mr. Edmondston, and a case of the disease related by Mr. Kerrison†, have added to the history, at least, of this deplorable malady.

The magnitude, the complex vascularity, and the functions of the liver, indicate its importance to the animal economy. But that this viscus is the general source of all mischief happening to the digestive organs, the alimentary canal primarily, and secondarily to the system at large, through the medium of these parts, must be taken with some allowance. That hypochondriasis and mania lurk in every aberration of its functions; and that the brain and nerves mightily suffer the moment there is too much or too little of bile; or when that fluid is in any sort vitiated, may fairly be doubted Full of woe, indeed, would be the life of man, if, every time the secretions of a viscus, liable to great, frequent, and sudden irregularities in its actions, were too abundant, deficient, or in any wise altered, his body suffered the pangs of disease, and his mind was "frighted from its propriety." Much, however, both of bodily health and mental comfort, is connected with a due action of the liver; and so far facts and observations elucidating "the history of liver complaints, and bilious disorders" in general, deserve attention. The *Observations sur la Nature et le Traitement des Maladies du Foie*‡, of the venerable Portal, has added largely to the stock of facts on diseases of the liver; and although in some points of practice it is greatly at variance with the therapeutics of England, there is much for every man to learn in a volume of 646 pages, emanating from the collections of a physician distinguished by his learning and research.

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* *Sta'part Vander Wiel* extended the property of receiving and communicating Rabies *contagiosa* to a great variety of animals. Equos, lupos, camelos, porcos, boves, vulpes, ursos, pardos, simias, viverras, mustelas, imo et gallos, gallinaceas, are in his list. The work, the only one left by Vander Wiel, in which this enumeration is found, was twice printed at Leyden, (in 1687, 8vo. and 1727, plates,) with the title of *Observationes rationes Medicæ, Anatomicæ, et Chirurgicæ*; and was translated into French, 2 vols. 12mo. Paris, 1758. A very singular part of Vander Wiel's work is *de Unicorno Dissertatio.*

† *Repository,* vol. ii. p. 197. ‡ *Repository,* vol. i. page 483.

A disease far more unmanageable, and far more formidable than affections of the liver, has been illustrated by Dr. Southey. This physician's treatise on Consumption will be particularly acceptable in the view it gives of the degree of phthisical diathesis existing in various nations in most parts of the world, and on the predisponent and exciting causes of this important malady. The evidence of its promulgation by contagion is examined with some care, and the effect of marsh misamata, in its supposed operation of checking the progress, and even curing consumption, is so far developed, as, probably, to deprive the well-informed physician of all expectation, either prophylactic or curative, from this source.

Vaccination, interesting under all circumstances, whether of prosperity or of failure, is peculiarly satisfactory at the present period, from its successful progress. From all parts of Europe, from Asia, Africa, and America, the details of its advances, and the relations of the security it affords, are most gratifying*.

Dr. Adams, who has so often elucidated by his writings the abstruse parts of medical science, has again appeared before the public in a treatise on the hereditary properties of diseases. In this he endeavours to shew the unfounded terrors and ill-judged cautions consequent on what he conceives to be erroneous opinions; and advises, as the Sybil once did Ænæas,

> Tu ne cede malis, sed contra audentior ito
> Quam tua te fortuna sinet.

Upon a subject of such obvious importance, that so little has been written seems singular; and this circumstance gives interest to the work of Dr. Adams.

A body of notes is attached, containing several short essays connected with the subjects of the text. Among these is an abstract of M. Portal's paper on hereditary diseases; a definition of madness and scrofula; observations on goître and cretinism, as the effects of hereditary causes; and remarks on elephantiasis and other cutaneous diseases, in answer to Dr. Bateman. Although opinion will vary, candour must allow industry and research to Dr. Adams.

His definition given of mania has the essential quality of conciseness, "a reverie from which the patient cannot be recovered:" but this might, as a definition, be improved, perhaps, by substituting *Permanent Reverie.*

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* Objections of a nature so efficient, were they founded on fact, having been urged against this great discovery, we have believed it to be our duty to examine the evidence which gave rise to them, in an Appendix to this Report.

Difficult as it may be to give an appropriate and unobjectionable definition of mania, unfortunately for mankind, the cure of mental derangement is still more arduous: this renders every attempt to elucidate and improve the treatment of some service to society. In this point, the "Essay on the Prevention and Cure of Insanity," by Nesse Hill, Medical-Surgeon, becomes a production of importance.

The design of Mr. Hill is to shew that Insanity is always a *symptomatic* disease: that it is never a purely mental complaint. And he thinks he has fully established the subsequent deductions:—1. That insanity has always corporeal disease for its foundation.—2. That it consists of but one species under two forms, viz. the sthenic and the asthenic, or mania and melancholia.—3. That it is not an hereditary disease.—4. That it is as generally curable as any of those violent diseases most successfully treated by medicine.

This is a very epitomized view of the object and result of researches characterized by the vast number of authorities produced to support opinions which are left doubtful; and of quotations to illustrate and explain what remains without perspicacity, singularly involved and obscure. This possibly will be the feeling of most who rise from the perusal of the "Essay on the Prevention and Cure of Insanity." Justice to Mr. Hill requires, however, the acknowledgment, that this may arise in part from obtuseness of perception in those who give the opinion; "for it is not a thing so easy as is conceived, to convey the conceit of one man's mind into the mind of another without loss or mistaking."

Pro captu Lectoris habent sua fata libelli.

II. Surgery.—The dissertation on gun-shot wounds, accompanied with engravings, by Charles Bell, possibly demands the first place in a report of the progress of Surgery in this country within the past six months. This treatise, though short, comprehends a variety of the points on this subject. It treats of wounds made by musket balls, and of the course of the bullet, and the probable place of its lodgment:—of the inflammation of gun-shot wounds:—of the treatment of gun-shot wounds of fleshy parts:—of the treatment of gun-shot fractures:—of necrosis from gun-shot fracture and wounds of the joints:—of the time for amputation in cases of gun-shot wounds of the extremities. The following narrative is strikingly illustrative of the advantages of keeping the temperature down, and of abstinence, in cases where the danger is always in proportion to the degree of inflammation. A shot struck a Dutch rifleman on the 17th of August, and carried away the left arm by the shoulder. The head of the humerus was completely blown

away, also a considerable portion of the scapula, and half of the clavicle. The surface of the wound exhibited ragged muscles and fragments of bone. The axillary artery was looked for in vain; and the case being considered deperate, nothing more was done than to cover the wound with lint, so as to defend it from the drifting sand. The army pushed on, and the poor creature was left where he lay till the afternoon, when he was placed with other wounded under a tent. The night was very cold; a good deal of blood oozed from the wound, but there was no jet or arterial stream. In the afternoon of next day, he was removed in a cart to a village two or three miles distant. In the month of November he was quite well. The recovery of this man was to be attributed to circumstances in themselves distressing—cold and abstinence from food; for, "excepting some cold tea, or cold water, he had nothing for the first forty-eight hours." This is a forcible lesson of the advantages gained by keeping under the re-action of the system, and especially of the benefit derived from keeping the temperature, general and local, as near as possible to, or beneath, the standard of health.

The work, with the singular title of an Essay on the *Venereal* Diseases which have been confounded with *Syphilis*, is designed to elucidate an important class of morbid affections hitherto mistaken for lues. The author, who is president of the College of Surgeons in Ireland, and surgeon to the Lock Hospital in Dublin, prosecutes his inquiry, he is of opinion, on the most simple plan. Whenever a primary ulcer of the genitals occurred which was destitute of the characteristics of chancre, the hardened edge and base, it was treated without the exhibition of mercury; and the same system was pursued in those cases of constitutional symptoms which had a doubtful appearance. The scaly syphilitic blotch of Willan, and the excavated ulcer of the tonsils of Hunter, were esteemed truly syphilitic, and treated with mercury. Upon the results discovered by pursuing this plan, the Essay is founded, and it consists—1. Of observations on those morbid poisons which stand in nearest relation to the syphilitic; and of evidence of the existence of venereal diseases, which do not arise from that poison:—2. Of the local and constitutional symptoms of syphilis; mode of treatment, and of the action of mercury on the system:—3. Of the first class of primary diseases which have been confounded with syphilis. This class contains four species, viz. a superficial ulcer, without induration, but with elevated edges; a similar ulcer without induration or elevated edges; an excoriation of the glans and prepuce, attended with purulent discharge; gonorrhœa virulenta;

constitutional symptoms arising from these, and alike in all.—4. Of the second class of primary diseases which have been confounded with syphilis, of which there are two species; the phagedenic ulcer; the sloughing ulcer; constitutional symptoms arising from each.—5. Of the constitutional symptoms which have not been traced to primary ulcers.—6. Inquiry into the probability of the spontaneous origin of some diseases, which bear a resemblance to the constitutional symptoms of syphilis.

The work on Chirurgical Diseases and Operations, by *M. le Baron Boyer*, makes an important feature in the progress of Surgery. This practitioner, known to the profession by his treatise on diseases of the bones, has extended his views to other branches of surgery. Inflammation, its nature, treatment, and termination; abscesses; gangrene; burns; wounds; tumours; ulcers; fractures; caries; necrosis; and diseases of the joints, form the principal subjects occupying his four thick octavos*.

If the concise narrative published by Dr. William Balfour, of the re-union of parts completely separated, almost realizes the promises made in the *Chirurgia de Curtorem* of Gaspar Talicotius; the success, last year, of Mr. Lynn, in supplying a lip from the integument of the chin; and, in the present, of Mr. Carpue fixing on a nose cut from that of the forehead, is equal to the vaunted success of those tribes of Hindus, who are represented as possessing extraordinary dexterity in this operation.

III. Midwifery.—The progress of obstetrical science within the preceding six months affords but a scanty stock of materials. From the press of this country has issued but two small elementary volumes. These are, a second edition of a Synopsis of the various kinds of difficult Parturition, with practical Remarks on the management of Labours, by Samuel Merriman, M. D. and the Accoucheur's Vade Mecum, by Joseph Hopkins, Surgeon. As tending to disseminate elementary knowlege of the Science, these volumes are highly creditable to the teachers by whom they are published. The actual practice of the art presents, however, some facts of more interest than its literature. Two cases of ruptured uterus occurring within a few weeks in London, have drawn attention to circumstances connected with this accident. In one the practitioners employed were prevented saving the patient's life

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* Traité des Maladies Chirurgicales, et des Operations que leur conviennent. Par M. le Baron Boyer. 4 tom. 8vo. Paris, 1814.

by the impudent interposition of authorative ignorance: in the other, any effort that art could make was unavailing. In both the rupture was found on the left side, near the *cervix uteri:* and in both that rupture took place after unavailing efforts long made by the uterus. Two questions arise upon these facts. In cases of females dying undelivered, does death always, or generally, arise directly from rupture of the uterus? Where the delivery of the child can only be effected by lessening its size, is it right to proceed with as much celerity as possible, in order to anticipate the fatal accident, which, in these cases, at least, occurred after considerable delay?

The publications of Drs. Armstrong and Brenan on Puerperal Fever, and its recently frequent occurrence in various parts of England, have called forth attention, in a degree that gives hope of a more successful treatment being established for that fatal malady. At present it seems to be ascertained, by evidence arising from various quarters, that the only chance for safety, is early depletion by blood-letting and by purging; and that the action of the two means should, as nearly as possible, be synchronous; a delay of a few hours placing the case beyond remedy. Much light has also been thrown on the true nature and qualities of this disease. A concurrence of observations made nearly at the same time, in distant places, almost prove its dissemination to be by contagion, and that it is a fever of specific origin, effecting its fatal ravages by the medium of rapid, and, except the curative process is early adopted, uncontrollable peritoneal inflammation. Of the method of cure proposed by Dr. Brenan*, nothing yet can be said. It is at present altogether empirical, beyond the reach of reasoning, and must stand or fall as connected with favourable or unfavourable events.

Nosological Table of Diseases, Synoptical View of the State of the Weather, and Observations on Morbid Effects arising simultaneously with Atmospherical Variations, from May to November 1814.

The object of this part of the Report being to ascertain the connection that subsists between variations in the atmosphere and the occurrence of diseases, the endeavour to collect extensive evidence has been earnest and indefatigable. With regard to the metropolis, this evidence, though

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* *Repository,* vol. ii. p. 392.

not complete, has been highly satisfactory; but, as relates to the provinces, information, at present, is too limited to warrant general conclusions. Having opened the way, however, to investigation, there is little fear but the final result will be favourable to the design of ascertaining the connection between the circumambient air and the state of health. For the completion of this desideratum, however, whether it be considered as applicable to medical practice only, or to the interests of science at large, it will be necessary to pursue some definite plan, extensively comprehensive in its views, and discriminatingly particular in its details.

To procure a satisfactory history of the weather, with the view, finally, to establish conclusions which may assume the form of principles, or to ascertain the causes productive of certain effects, it will be requisite to notice a great variety of circumstances of diurnal occurrence in the atmosphere, and connected with many others in the progress of vegetation, and the various conditions of animal life.

The parallel or simultaneous occurrence of some morbid states of the animal system, with ascertained conditions of the atmosphere, will, by degrees, possibly explain their mutual dependence in the form of cause and effect. With this view, it may be proper likewise to notice many occurrences in nature, not strictly atmospherical, or at present known to influence health, but possibly depending on causes similar to, or the same as those which produce extensive morbid effects, and what has been called an epidemic constitution of the air. When the connection of known, and especially visible effects, with the cause of obscure, or unintelligible operations, is satisfactorily made out, a point is arrived at of important illustration. Extensive observations, made in various places, of the appearance of diseases in man and other animals, in conjunction with the temperature, pressure, humidity, electricity, &c. of the atmosphere; the abundance or paucity of various insects, as aphides, the larvæ and caterpillars of different papilios; the forwardness or backwardness of vernal vegetation, blights, mildews, inundations, and dry fogs, the prevalence of particular winds, &c. may lead to conclusions, and to truths, the advantages of which the professors of medical science will not be reluctant to acknowledge.

A Nosological Table *of the aggregate of the Cases recorded in the Monthly Registers of the* Repository *of the* Diseases of London, *between the* 19*th of May and the* 20*th of November* 1814.

CLASS I. PYREXIÆ.	May June	June. July.	July. Aug.	Aug. Sept.	Sept. Oct.	Oct. Nov.	Total.	Fatal.
ORDO 1. Febres.								
Intermittentes	28	27	25	24	27	23	154	
Continuæ	165	159	120	135	127	129	835	7
Typhus	15	24	33	34	32	21	159	33
ORDO 2. Phelgmasiæ.								
Phlogosis	4	7	5	8	5	5	34	
Phlegmasia *dolens*	.....	1	.....	.....	.....	.....	1	
Ophthalmia	75	83	74	71	54	50	407	
Phrenitis	7	6	3	4	3	6	29	6
Cynanche *Tonsillaris*	98	94	80	73	57	82	484	
—— *maligna*	17	6	12	8	3	9	55	3
—— *Trachealis*	2	3	1	5	5	4	20	6
—— *Pharyngea*	.....	.....	.....	.....	.....	1	1	
—— *Parotidea*	13	8	6	3	1	7	38	
Bronchitis *acuta*	19	5	3	8	8	16	59	9
—— *chronica*	9	4	4	7	6	29	57	3
Pneumonia	66	71	31	28	46	119	361	35
—— *pleuritis*	.....	.....	3	.....	6	8	17	1
Phthisis	40	33	31	47	26	31	208	64
Carditis	2	2	.....	4	3	2	13	2
Peritonitis	12	15	10	12	10	7	66	4
Gastritis	2	4	2	2	3	2	15	1
Enteritis	13	18	9	13	10	6	69	17
Hepatitis	43	40	50	45	17	25	220	7
Splenitis	1	2	.....	.....	.....	2	5	1
Nephritis	7	2	5	6	7	9	36	1
Lithiasis	.....	1	3	3	1	2	10	
Hysteritis	8	2	3	1	.....	3	17	1
Rheumatismus *acutus*	86	95	67	69	83	98	498	2
—— *chronicus*	79	76	56	106	89	106	512	
Odontalgia	5	3	5	4	.....	.....	17	
Cephalalgia	74	67	48	59	60	70	378	
Neuralgia	.....	.....	.....	.....	.....	1	1	
Pleurodyne	4	2	5	9	5	6	31	
Lumbago	.....	3	2	.....	.....	.....	5	
Ischias	.....	.....	.....	.....	.....	1	1	
Podagra	28	24	14	8	25	20	119	1
ORDO 3. Exanthemata.								
Variola	29	25	15	25	25	35	154	20
Impetigo	15	6	16	8	3	3	51	
Porrigo *larvalis*	6	9	6	4	3	5	33	
—— *scutulata*	11	15	12	7	9	11	65	
—— *favosa*	18	7	5	4	4	6	44	
Ecthyma	.....	8	3	.....	2	2	15	
Scabies	93	86	91	99	50	57	476	
Varicella	25	24	17	14	28	30	138	
Herpes	20	28	26	24	4	21	164	
Eczema	1	6	5	2	3	1	19	

ORDO 3. EXANTHEMATA, *Continued.*	May June	June July	July Aug.	Aug. Sept.	Sept. Oct.	Oct. Nov.	Total.	Fatal.
Aphtha	17	19	30	23	23	15	127	1
Cancrum Oris	.....	.....	.....	.....	2	.....	2	
Miliaria	12	7	3	1	.....	1	24	2
Rubeola	141	128	60	64	72	103	568	16
Scarlatina *simplex*	11	21	5	16	11	14	78	
—— *anginosa*	8	4	18	12	13	16	71	4
—— *maligna*	.....	3	2	.....	.....	.....	5	1
Urticaria	14	33	22	16	11	7	103	
Roseola	17	1	2	.....	.....	.....	20	
Purpura	2	2	1	1	.....	2	8	
Erythema	7	5	5	3	4	2	26	
Erythismus *mercuriale*	.....	1	.....	.....	.....	.....	1	
Erysipelas	53	48	32	38	50	31	252	1
Pemphigus	3	.....	1	1	.....	.....	5	
Pompholyx	.....	.....	.....	1	.....	.....	1	
ORDO 4. HÆMORRHAGIÆ.								
Epistaxis	2	1	.....	2	2	2	9	
Hæmoptoe	23	17	21	35	25	23	144	5
Hæmorrhois	39	32	26	21	29	37	182	1
Menorrhagia	48	38	35	59	48	52	280	3
Abortio	19	21	10	13	18	17	98	1
Hæmatæmesis	5	2	9	7	8	9	40	1
ORDO 5. PROFLUVIA.								
Catarrhus	260	163	114	135	191	323	1186	2
Leucorrhæa	31	34	38	35	23	23	184	
Dysenteria	11	21	37	35	26	22	152	3
CLASS II. NEUROSES. *ORDO* 1. COMATA.								
Apoplexia	13	15	10	11	6	13	68	26
Paralysis	29	21	23	20	21	32	146	11
ORDO 2. ADYNAMIÆ.								
Dyspepsia	146	146	126	135	136	145	834	
Asthenia	73	78	55	63	38	31	338	6
Gastrodynia*	48	54	58	71	41	47	319	
Entrodynia	30	31	45	48	25	29	208	
Hypochondriasis	20	16	17	16	20	8	97	
Chlorosis	26	21	18	11	21	25	122	
Icterus	14	12	10	16	17	22	91	
Vertigo	41	42	28	39	53	42	245	4
ORDO 3. SPASMI.								
Trismus	.....	.....	.....	.....	1	.....	1	
Convulsio	11	19	9	20	18	13	90	11
Singultus	.....	.....	.....	.....	1	.....	1	
Chorea	3	3	1	2	3	2	14	
Epilepsia	8	14	8	6	12	12	60	2
Asthma	65	44	51	48	68	90	366	21
Dyspnœa	25	31	19	20	29	25	149	
Pertussis	70	27	36	32	27	37	229	16
Pyrosis	13	7	11	16	5	8	58	

ORDO 3. SPASMI, *Continued.*	May June	June July	July Aug.	Aug. Sept.	Sept. Oct.	Oct. Nov.	Total.	Fatal.
Colica	33	47	46	64	49	35	274	2
Cholera	42	51	151	108	47	11	410	3
Diarrhœa	136	131	209	251	181	134	1042	5
Diabetes	1	.....	2	.....	.....	2	5	
Hysteria	38	41	44	37	37	42	239	
Hydrophobia	.....	1	.....	.....	.....	.....	1	1
Tic Douloureux	2	.....	.....	.....	.....	1	3	
ORDO 4. VESANIÆ.								
Mania	14	17	17	10	5	3	66	
CLASS III. CACHEXIÆ								
ORDO 1. MARCORES.								
Tabes	21	26	17	11	8	14	97	16
ORDO 2. INTUMESCENTIÆ.								
AQUOSÆ.								
Anasarca	26	24	33	35	20	23	161	13
Hydrocephalus	13	10	10	4	7	12	56	36
Hydrothorax	6	8	9	6	5	10	44	13
Ascites	16	10	12	20	20	12	90	15
SOLIDÆ.								
Physconia	1	.....	.....	.....	.....	.....	1	
Rachitis	6	3	4	3	.....	.....	16	1
ORDO 3. IMPETIGINES.								
Scrofula	39	24	43	21	8	19	154	3
Scorbutus	2	.....	.....	.....	1	.....	3	
Acne	7	7	3	2	8	9	36	
Sycosis	.....	1	1	.....	2	.....	4	
Lepra	5	8	3	4	5	4	29	
Psoriasis	30	33	33	3	16	25	140	
Pityriasis	.....	1	.....	.....	.....	.....	1	
Ichthyosis	.....	1	.....	.....	.....	1	2	
Lichen	17	8	13	1	5	.....	43	
Prurigo	1	.....	.....	.....	.....	.....	1	
CLASS IV. LOCALES.								
ORDO 1. DYSÆSTHESIÆ.								
Amaurosis	.....	.....	.....	.....	.....	1	1	
ORDO 2. DYSOREXIÆ.								
Anorexia	.....	.....	.....	1	.....	.....	1	
ORDO 4. APOCYNOSES.								
Enuresis	2	.....	.....	.....	1	.....	3	
Gonorrhœa pura	... ...	1	... ..	.....	.....	.....	1	
ORDO 5. EPISCHESES.								
Obstipatio	52	60	45	56	52	39	304	1
Ischuria	7	6	5	5	8	8	39	1
Dysuria	10	10	11	5	9	10	55	
Amenorrhœa	33	45	40	23	27	26	194	

ORDO 6. TUMORES.	May June	June July	July Aug.	Aug. Sept.	Sept. Oct.	Oct. Nov.	Total.	Fatal.
Cancer	5	2	1	1	3	.....	12	2
Bronchocele	.....	1	.....	.....	.....	.....	1	
ORDO 7. ECTOPIÆ.								
Hernia Humoralis	.....	1	.....	.....	.....	.....	1	
HETEROCLITES.								
Vermes	46	35	33	36	40	34	224	
Morbi Infantiles†	200	225	192	199	184	167	1167	29
—— Biliosi†	244	204	198	171	174	144	1135	
TOTALS‡	3553	3305	3076	3148	2911	3139	19132	503

* *Gastrodynia* was accidentally omitted in the last Nosological Table: the number of cases which ought to have been inserted was 197.

† For an explanation of these terms, we refer to vol. ii. p. 101.

‡ In the former aggregate Table (vol. ii. p. 101), the number of cases was 17,641; which, with *Gastrodynia* omitted, and 19,132 in the present Table, gives a total of near *thirty-seven thousand!*

STATE OF THE ATMOSPHERE AND DISEASES.

FROM THE 20TH OF MAY TO THE 19TH OF JUNE 1814§. —Greatest elevation of the mercury in the barometer, 30^2; greatest depression, 29^5:—highest temperature, 79°; lowest temperature, 45°:—greatest atmospherical dryness, 41°; greatest atmospherical humidity, 7°:—prevailing winds, E. and NE:—quantity of rain, two inches, 80-100.

The temperature of this month experienced sudden and extensive transitions; the thermometer varying from 45° to 79° in the middle of the day. Though generally cold and humid, raining on thirteen days, and several times with great violence, yet it was less productive of disease than could have been suspected *à priori*. Complaints of the lungs, whether affecting the mucous membrane only of that organ, or inflaming its substance, have been less frequent and less severe than the humid coldness and sudden transitions would have warranted the practitioner to have expected, upon popular and pretty generally

§ In the first Half-yearly Report, published in the *Repository*, the synoptical history of the weather was taken by the calendar months; but, to preserve an uniformity, it has been thought better to adopt the intervals agreeing with the monthly returns, that is, beginning on the 20th of one month, and closing with the 19th of the following. By this, a more easy reference is had to the Nosological Tables, as well as to the Registers, and a facility is afforded for comparing general results with particular facts.

received notions. This fact, with others*, may induce to the agitation of a question of some importance, viz. whether *a cold and humid atmosphere, or that which is cold and dry, be most productive of diseases of the respiratory organs?*

The number of cases of diseases reported in the *Repository* of this month, and presumed to be influenced by the state of the atmosphere, were 2116. Of these, 69 were asthma, bronchitis 28, catarrh 260, cynanche 142, C. trachealis 2. It may be remarked, that these cases of Croup occurred on the day after the highest temperature the year had then produced, when the therm. was 79° at noon in the shade. On the day when the disease appeared, the 15th of June, the therm. was 74°. Hæmoptoe 23, pertussis 70, phthisis 40, pneumonia 66. Fevers, generally, 193; in its specific form of typhus, 15; rheumatism 165, erysipelas 53, cholera 74, diarrhœa 136, two deaths; dysentery 11. The exanthematæ in some forms decreased in number this month. Scarlatina diminished from 56 in the preceding month to 19 in this; rubeola increased from 122 to 141, but diminished in severity. Variola also increased in number and fatality, making the deaths about one in five. Of the *morbi biliosi*, (comprehending many nameless deviations from health, langour, oppression, dyspepsia, hypochondriasis, and mental aberrations not arising to positive insanity,) possibly depending on torpidity of the liver, the return has been copious, containing 244 cases. That the fatality accompanying lowered hepatic action, however, is very small, seems proved by no death having occurred in this genus†. It is to the torpid state of the liver, that all those disorders in this country, popularly termed bilious, may perhaps, with great propriety, be referred.

From the 20th of June to the 19th of July. — Greatest elevation of the mercury in the barometer, 30³; greatest depression, 29⁷:—highest temperature, 78°; lowest temperature, 55°: greatest degree of atmospherical dryness, 35°; greatest degree of atmospherical humidity, 12°:—prevailing winds, N. and NW:—quantity of rain, 63-100 of an inch.

An unusual coldness and want of sun marked the early portion of this period, exceedingly retarding the progress and ripening of fruits; but toward the close of June, the tem-

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* Vide the Report from January to June 1814, *Repository*, vol. ii. p. 105,

† In the preceding Half-yearly Report, there was a return of 794 cases of this Protean form of disease, of which two only were fatal.

perature rose, and the heat was sometimes oppressive from the 1st to the 19th of July. In the preceding month the return of cases, influenced by atmospherical changes, was 2116; in the present it is only 1880. This may be accounted for in part, to the diminution of the population of London by migrations to the country, &c.; and in part, by the summer months being less productive of disease than those of the winter.

Disorders of the organs of respiration rapidly diminished. The cases of asthma were fewer in number, and lessened in fatality. Bronchitis diminished from 28 to 9; and catarrh from 260 to 168. Cynanche was also less frequent, but Cynanche trachealis increased. In the preceding month, two cases only were returned; in this, there were three, with one death; hæmoptoe 17; pneumonia 71; pertussis 27; phthisis pulmonalis 33. Disorders of the *primæ viæ*, allowing for the diminution of the general return, considerably increased, and remarkably so in the dysenteric form. Fevers (synochus and synocha) decreased, the cases returned being 183; but in the specific form of typhus, an increase occurred. The exanthematæ, as referred to the aggregate return, increased; but diminished in severity, especially in variola; of which there died but 1 in 25, instead of 1 in 5, as happened in the preceding month.

From the 20th of July to the 19th of August. — Greatest elevation of the mercury in the barometer, 30^2; greatest depression, 29^8:—highest temperature, 92^{0}*; lowest temperature, 63^{0}:—greatest degree of atmospherical dryness, 45^{0}; greatest degree of atmospherical humidity, 27^{0}. prevailing winds, W. and SW.:—quantity of rain, 65-100 of an inch. In this month there were thirteen cloudless days.

The temperature in the early part of this month was high; the thermometer (Farenheit's) varying from 80^{0} to 84^{0}; and once in different shaded situations it rose to 94^{0}. This extraordinary degree of heat occurred on the 28th of July, and was followed in the evening of that day by a thunder storm; from which time the temperature lowered to the 20th of August.

Of the diseases esteemed peculiar to this period of the year, there was an increase sufficient to establish the fact. Although the general return diminished considerably from the preceding

* We should have doubted the accuracy of our thermometer in this instance, or that it had been influenced by some reflected heat, had not some others marked a temperature of 94^{0}; at Richmond in Yorkshire, the thermometer was 86^{0}; and at Derby, 83^{0}, on this day.

month*, yet of cholera, diarrhœa, and dysentery, 397 cases were returned; of these, one of dysentery only was fatal. Asthma, catarrh, bronchitis, pneumonia, phthisis, &c. very much diminished. Pneumonia, though diminished in numbers, had a character of great severity, accompanied with a fatality more than double that which occurred in the preceding month. Cases of pneumonic inflammation happening in a high atmospheric temperature, have often an intensity that does not occur when the air is colder. Can this be accounted for by the application of heated air to an inflamed surface? Fevers, in the form of synochus, considerably decreased; but cases of typhus increased from 25 to 33. The exanthematæ decreased in number, and were more mild in degree, especially rubeola.

From the 20th of August to the 19th of September. —Greatest elevation of the mercury in the barometer, 30^{5}; greatest depression, 29^{7}:—highest temperature, 70°; lowest temperature, 57°:—greatest degree of atmospherical dryness, 50^{5}; greatest degree of atmospherical humidity, 5°:—prevailing winds, N.W. and N.E.:—quantity of rain, one inch 60-100.

Variable winds, with frequent showers, occurred in the early part of this period. About the beginning of September heavy rain fell, succeeded, for some days, by an unusual atmospherical humidity. From the 14th to the 19th of the same months, autumnal fogs hung over the metropolis every morning, followed by clear and sunny days, and accompanied by a dry state of the air as great as had happened at any time in the summer.

Disorders of the *primæ viæ* make a prominent feature in the history of the diseases of this period, especially in the forms of diarrhœa and dysentery. Diseases of the chest also increased. Asthma, catarrh, hæmoptoe, and phthisis present more cases. Typhus also increased, but with diminished fatality. A disease of a highly inflammatory quality (*Cynanche trachealis*), afforded likewise an increased number of cases; one in five of which was fatal. The exanthematæ were more frequent, but milder: the most fatal of them, variola, averaging one death in something more than twelve.

From the 20th of September to the 19th of October. —Greatest elevation of the mercury in the barometer, 30^{5}; greatest depression, 29^{2}:—highest temperature, 63°; lowest temperature, 32°:—Greatest degree of atmospherical dryness,

* The number of cases in this department of the Register, from the 20th of June to the 19th of July, were 1880; from the 20th of July to the 19th of August, only 1578.

39°; greatest degree of atmospherical humidity, 5°:—prevailing winds, S. S.W. and S.E.:—quantity of rain, one inch 70-100.

The atmospherical variations, from September the 10th to October the 19th, were remarkable. There was rain on fourteen days, frequent fogs, and, for several days together about the beginning of October, nearly a cloudless atmosphere. Toward the end of September the temperature was high, with thunder showers: on the 10th of October the cold was intense; the thermometer descending to 32° in the midst of the metropolis, and in the vicinity to 28°, or, as has been reported, to 26°. Ice covered stagnant waters every where, and, in some places, a few miles from London, acquired a thickness of three fourths of an inch. The fruit of the grape vine was nearly destroyed, and the leaves of trees and plants were so much frozen as to fall long before their usual period. This intensity of cold continued little more than 24 hours: on the 8th the thermometer marked 40°; on the 10th, 32°; and on the 11th, 46°, in London*.

The extraordinary range of temperature in this period does not seem to have contributed greatly to the production of diseases generally, except catarrh, which became more frequent; but those which did occur were of a more fatal character, and the number of deaths, particularly under two years of age, was much increased. Complaints of the first passages, in the form of cholera and diarrhœa, much decreased. Typhus seems to have prevailed in nearly the proportion of the preceding month, but with diminished fatality. Pertussis assumed a very severe character, and the deaths by it were nearly one in five. Rubeola was more frequent, and variola peculiarly fatal, the deaths being above one in four by this disease.

From the 20th of October to the 19th of November. — Greatest elevation of the mercury in the barometer, 30°; greatest depression, 29°:—highest temperature, 56°; lowest temperature, 32°:—greatest degree of atmospherical humidity, 13°:—prevailing winds, W. and S.W.—quantity of rain, two inches 20-100.

Rain and fog were remarkably prevalent during this period. On 19 days rain fell; and seven days were foggy. The

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* This low temperature seems to have extended over the kingdom. At Richmond, in Yorkshire, the thermometer descended to 26°: at Derby to 28°; when all the tender vegetables and flowering plants were destroyed.

cold was not so intense as in October: only once was a film of ice formed on water, at least in London. On the 8th of November there was a storm of thunder, and on the 9th fell the only snow perceived this winter.

The termination of disease in death, from the 20th of October to the 19th of November, was more frequent than in the preceding period: and this fatality principally happened among children under five years of age. There was a gradual diminution of complaints of the first passages, and a proportional augmentation of the inflammatory diathesis. Severe inflammatory affections of the lungs often appeared, and asthma especially experienced a considerable increase. Typhus, though diminished in frequency, increased in fatality. Variola was likewise frequent and severe; and rubeola manifested an unusually destructive virulence.

The following general view, with the results of those diseases more fully admitted to have an atmospherical origin, either referable to temperature, or depending on some specific, though unknown, state of the air from May to November 1814, is at least curious, if not satisfactorily elucidative. It is taken from a series of facts furnished by the numbers of the *Repository*, on a scale which, possibly, medical science has never before witnessed.

ASTHMA.

From 20th May	to	19th June,	1814,	cases	69	fatal	9
——— June	———	July	——	.....	44	.....	4
——— July	———	Aug.	——	.....	33	.....	2
——— Aug.	———	Sept.	——	.....	48	.....	1
——— Sept.	———	Oct.	——	.....	68	.....	3
——— Oct.	———	Nov.	——	.....	91	.....	2

APOPLEXY.

From 20th May	to	19th June,	1814,	cases	13	fatal	6
——— June	———	July	——	.....	15	.....	6
——— July	———	Aug.	——	.....	10	.....	2
——— Aug.	———	Sept.	——	.....	11	.....	4
——— Sept.	———	Oct.	——	.....	6	.....	1
——— Oct.	———	Nov.	——	.....	13	.....	7

CATARRH.

From 20th May	to	19th June,	1814	cases	260	fatal	0
——— June	———	July	——	.....	160	.....	2
——— July	———	Aug.	——	.....	114	.....	0
——— Aug.	———	Sept.	——	.....	135	.....	0
——— Sept.	———	Oct.	——	.....	191	.....	0
——— Oct.	———	Nov.	——	.....	323	.....	0

DIARRHŒA.

From 20th May to 19th June, 1814	cases 136	fatal	2
—— June —— July ——	131		0
—— July —— Aug. ——	209		0
—— Aug. —— Sept. ——	251		1
—— Sept. —— Oct. ——	181		1
—— Oct. —— Nov. ——	134		1

This statement, shewing that the recurrence of certain trains of diseased action is obviously connected with the seasons of the year, the materials collected in the *Repository* might carry much further. The whole, however, is before the medical public, and the results may be easily appreciated.

Of the recurrence and fatality of diseases generally, as connected with the annual revolution of the earth, much has been asserted, and much guessed at. The following tabular view of the increase and decrease of disease from May to November 1814, with the accompanying fatality, taken from the source which afforded the preceding statement, may open the views of practitioners on grounds more secure than have heretofore presented.

The number of cases in all the genera of diseases recorded in the Registers of the *Repository* were —

From 20th May to 19th June, 1814	3550	fatal	98
—— June —— July, ——	3326		90
—— July —— Aug. ——	3060		80
—— Aug. —— Sept. ——	3198		59
—— Sept. —— Oct. ——	2926		76
—— Oct. —— Nov. ——	3154		101

Lest wrong conclusions should be deduced, however, from this view, it is essential to remark, that, although for the greater accuracy, the cases of disease each month exhibit have been added together, yet they cannot be understood as conveying an absolutely correct criterion of the relative proportion one month holds with another. The principal cause that prevents a register of the diseases of London affording very accurate datâ of its state of health, is the great fluctuation of its population in some of the districts under which its medical topography has been arranged*. An endeavour has been made in the observations attached to the monthly tables to obviate this defect, by a notation of the prevailing diseases, with comments on the local information afforded by the registers of individual practitioners.

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* This circumstance has been particularly adverted to, and even explained, in a view of the Med. Topog. of London. *Repository*, vol. i. p. 70.

Cynanche Trachealis, or *Croup*, as might be expected, has not been so frequent in the summer and autumn; yet it has been remarkably more severe in its attacks, and, consequently, the number of deaths is greater. From November 1813 to May 1814, thirty-nine cases occurred, and only three deaths; from May to November there are twenty cases, and six deaths.

All the *exanthemata*, attended with pyrexia, have much augmented, except *Scarlatina*. If the district tables are examined, the progress of measles is clearly to be traced from the southern to the western and north-western districts; in which also it has most prevailed, although it has spread to all parts of the town. It commenced in March, was most rife in June, and abated in September; and is now again extending, attended with severe pulmonic symptoms.

There has been little of *Scarlatina* in the town, at any period of the year; and that little has been very mild. As as far experience and observation go, there is the strongest reason for concluding, that in no season does scarlet fever become so general in the town, as in its environs and in the country. It has been very common around London this autumn; and many boarding schools have been much infected with it.

Hooping-cough has decreased in frequency; but the proportion of deaths has been greater than in the winter and spring months. This disease became common in February, was at its height in April, and declined in July.

On inspecting the returns, it will be remarked, that, in the fourth or eastern, and in the tenth or eastern of the Surry-side, districts, hepatic affections were more prevalent than in any of the other nine. An explanation of the cause of this is given in the words of a most respectable and intelligent practitioner, resident in the latter district; and which is applicable for both, as each district is nearly the same in topographical site, and in the occupations of the inhabitants*.

"For the last twenty years, bilious diseases have been very prevalent in this neighbourhood. By bilious diseases, I mean all those constitutional or local symptoms which are referable to a morbid secretion of the liver. This is proved by inspection of the alvine evacuations, and the complete removal of the symptoms by discharge of the morbid matter. When I inform you that one fourth of the inhabitants of this district are sea-faring people, who frequent tropical climates, and are far from being abstemious livers, this will not surprise. An

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* Vide *Repository*—"Medical Topography of London," vol. i. p. 84 and 87.

additional cause, is large tracts of land, lately excavated for basins and canals, through which our marshes are often inundated; and their surfaces, when the water escapes, are left to evaporation and decomposition. A very singular fact is, that we have frequent bilious remittent fevers, and but very few agues. From the vast number of individuals of all ages daily attacked, it is evidently the effect of atmospheric influence. I often observe the intestinal evacuations of children as dark-coloured, slimy, and offensive as in the adult. No treatment seems to succeed but gentle emetics, followed by occasional doses of calomel and rhubarb, while the bowels are kept completely in action by small doses of sulphate of magnesia, or phosphate of soda with senna. To alter the secretion of the liver, I generally combine rhubarb with hydrargyrus cum creta, or the pil. hydrargyry è rheo, every night at bed-time, till the secretion is improved, or the mouth slightly affected."

APPENDIX.

VACCINATION.

To a Report of the Progression of Medical Science, some notice of the success of Vaccination, and the judicious measures exerted to promote it, may, with propriety, be appended.

We have briefly quoted* a Report of the National Vaccine Establishment for 1814, and another of "*The State of Vaccination in Sweden*," dated February the 10th, 1814. From the first of these we have the satisfaction of learning that the benefits resulting from the practice of vaccination are becoming more and more evident; that it is extending, not in these kingdoms only, but in the most remote of the British colonies; that at the Cape of Good Hope and Ceylon it has *totally* extinguished small-pox; and that, through the means of a British ambassador (Sir Gore Ouseley), it has been adopted by the Royal Family and population of Persia. This Report contains also some very appropriate remarks on the causes of failure; and describes the most improved methods of inoculating with the vaccine lymph. It censures, with due severity, the illiberal and self-interested motives that have prompted some individuals, industriously, to propagate small-pox contagion by gratuitous inoculation; and feelingly concludes, with

* Vide *Repository*, vol. ii. p. 259.

sentiments of regret, "that regulations for the prevention of the promiscuous intercourse of the infected with society at large, which have, at different times, been enforced in regard to the plague, cannot be extended with equal facility to small-pox."

To this Report, that of Sweden forms a very apposite corollary, as it exhibits the positive evidence of the practicability of extirpating the small-pox from a whole kingdom, when an enlightened monarch and an energetic government lend their powerful support and influence, to second the exertions of a well-informed, disinterested, and united body of medical practitioners.

To these two Reports we have added that of the CENTRAL VACCINE SOCIETY of PARIS for 1812; by which it appears that the hope of exterminating small-pox from France, as it has been from Sweden, is by no means problematical.

So recently as October last*, the National Vaccine Establishment of London published a Resolution, and a spirited Appeal to the Clergy, Magistracy, and all other persons, calling upon them, "*as they value the lives of human beings*, to use their influence and authority in preventing the exposure of persons having upon them small-pox; and so far to unite in arresting the propagation, and forwarding the extinction of that pestilential malady."

As the conductors of a public journal, established for the investigation of facts, and the illustrating and improving the practice of medicine, we have endeavoured to preserve an even and steady course, unwarped by prejudice, and unmoved by passion or personal feelings: we have not denied our pages to free discussion, nor any information elucidating the various subjects within the pale of our plan or professions; consequently to an object of such vital importance to the country as VACCINATION, we have, both by duty and inclination, directed a constant and watchful eye†.

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* Vide *Repository*, vol. ii. p. 533.

† Since the publication of the first number of the *Repository*, we have not heard of or received one authenticated fact prejudicial to vaccination; yet we feel persuaded that our knowledge of the cow-pox is by no means complete, and that much observation is still necessary to discover and develope all the peculiarities and varieties it exhibits in different constitutions.

We recently saw four children in one family with natural small-pox, who had gone through vaccination at different ages. The youngest child, which of course had been most recently vaccinated, sickened the first; the eldest had the greatest share of eruption. But although some of these children were very full, and the disease ran on to the usual period before it turned, yet the bases of the pustules were much less inflamed, and there was scarcely any secondary

To this subject our attention was, perhaps, more particularly called, by some extraordinary observations contained in an Appendix to a publication* nearly contemporaneous with our own, that would, if true, have annihilated all hopes of diminishing mortality by the introduction of vaccination; and at once have overpowered one of the strongest reasons for its general adoption.

In a review of Dr. Watt's work on Chincough†, we entered very fully into an investigation of the grounds of his opinion, that "while small-pox were in full force, they had the power of modifying and rendering the measles mild;" and the inference he thence deduced, that the increased number of deaths stated in the bills of mortality is to be ascribed to the very general diminution of small-pox. But at the same time that we combated that hypothesis, as we conceived it to be, we expressly enjoined the necessity of a vigilant examination of the facts; and we have on various occasions, both publicly and in our private correspondence, requested information; that by impartially summing up the evidence adduced, we might for ever set at rest a question, with the affirmative or negative of which the dearest interests of humanity, and the polity of every state are intimately connected.

In the Registers of Diseases published in the *Repository* for the last twelve months, 831 cases of measles are recorded, of which thirty-seven were fatal; being about $4\frac{1}{2}$ in 100 cases of measles, and about $3\frac{1}{2}$ in every 100 deaths from all diseases, the total of which is 1066. But it must be remembered, as we have before observed, that although we attach implicit credit to the accuracy of the diseases entered in the Registers, yet we are fully aware that equal correctness, from various causes‡, cannot be expected in the return of all the deaths con-

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fever, as in natural small-pox in subjects that have not had the cow-pox.

Perhaps one of the most singular cases that has been recorded occurred in the daughter of Dr. Stewart, of Plymouth. She had been vaccinated in infancy, and bore all the evidence of the disease having gone through its regular stages. In about three years she had the natural small-pox, and after an interval of several years, the same disease again attacked her in a very severe degree. How are these anomalies to be reconciled, but by ascribing them to those idyosyncracies which divert Nature from her ordinary course, and defeat the inferences of human experience and calculation?

* Vide a *Treatise on Chincough.* By Robert Watt, M.D.

† Vide *Repository,* vol. i. p. 311.

‡ Such as removal from town, change of medical attendants, &c.

sequent on the diseases entered. But in acute disorders, such as measles, there is little probability of error; and the more especially since so strict an attention has been repeatedly solicited to the progress and event of that disease.

Of the thirty-seven fatal cases of measles which we have reported, *thirty-one* were of children of the lowest and poorest classes of the people, the unwilling patients of public charities, or the subjects of scrofula, rickets, &c.; and were under circumstances of want, wretchedness, and bad lodging—conditions most unfavourable to its successful termination.

We have likewise sought information upon this interesting subject from various charitable institutions for the support and education of children in this metropolis; and have already quoted the authority of Mr. Field, Apothecary to Christ's Hospital; Mr. MacGregor, Surgeon to the Royal Military Asylum, Chelsea; and Dr. Stanger, Physician to the Foundling Hospital*. To these we can now add that of Mr. Colbeck, Surgeon to the Hospital at Hertford for the reception of children under the age admitted into Christ's Church in London, who recently had under his care from 60 to 80 ill of measles at one time. The fifth volume of the Medico-Chirurgical Transactions (p. 435) contains a paper by Mr. MacGregor, in which he details the result of a subsequently very minute inquiry; and annexed to it are extracts of two letters to Dr. Marcet, from Dr. Henry of Manchester, and Mr. Holland of Knutsford; all tending most satisfactorily to prove that Dr. Watt's remarks, deduced from the Glasgow tables of mortality, do not apply to any other place; and are not sanctioned by any other person's experience†.

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* *Repository,* vol. i. p. 330.

† Measles were much more common in Paris in June, than they had been in any preceding month of this year: they were of a very benign kind, and with little fever; but with most of the patients, a sore-throat prevailed, similar to that of scarlatina. This epidemic was one of the most mild that had ever been there observed. Vide *Journal de Medicine, Aôut,* 1814, p. 333.

The number of deaths in 1812, from small-pox, in Paris, was 259—deaths from all diseases, 20,133. In 1813 the deaths from small-pox were 207—deaths from all diseases, 18,676. It is impossible to ascertain the number of deaths from measles in Paris; because they are placed, in the bills of mortality, under the general head of deaths from "Cutaneous Inflammations." But we meet with no remark among the French writers, who are very fond of statistical inquiries, that deaths from measles have increased since the introduction of vaccination.—See some very conclusive observations on this subject, in the *Edin. Medical and Surgical Journal,* vol. xxxvii. p. 89.

How assiduously we have prosecuted this inquiry, must be apparent to all our readers; and if our means of collecting information be estimated by the Registers of the *Repository*, which, in the past year, embrace *thirty-seven thousand* cases of diseases, in nosological and monthly arrangement, it is presumed we have drawn our deductions from a source unparallelled in the annals of medicine for numbers; and if the character and ability of the majority of the reporters who contribute to them be considered, none will be found more deserving unlimited confidence.

Upon such grounds we take our stand; and most confidently conclude, that Dr. Watt's inferences, as far as regards every part of Great Britain, except Glasgow, (and even as they concern that city, we can scarcely accord with his conclusions,) are erroneous: and from sources much more numerous and extensive than he possesses, we have the satisfaction of finding that they are completely refuted.

Admitting that the deaths from measles are more numerous than before vaccination was discovered, the causes do not appear to us mysterious or difficult of solution; nor does occasion exist for referring the increased fatality to a greater predisposition in the constitution to be affected by measles in those who have not had the small-pox, than in those who have passed through that disease.

In every country where vaccination has been introduced and adopted, the population has considerably augmented: the same result has followed in England, notwithstanding the formidable opposition it has encountered. The numerous district establishments for gratuitous vaccination have greatly promoted its extension, and tempted the lower orders to have their children inoculated with a disease that occasions little or no indisposition; and, consequently, so much less trouble and anxiety than small-pox. Besides, the opportunities of gratuitous inoculation were formerly few to those now, in every quarter, presented.

Inoculation of small-pox having been formerly very generally adopted by the higher and middle orders of society, among them deaths from that disease were very rare; and, therefore, vaccination in these classes has done little to the saving of human life. It is among the poor and the necessitous, that death from small-pox made the greatest ravages; and it is in this class that the population has increased.

So many more children of this class being consequently preserved from the fatal effects of small-pox, by the prophylactic power of vaccination, there are necessarily more subjects upon whom epidemics, such as measles, hooping-cough, &c. may exercise their influence and effect. And this, we think satisfactorily, accounts for an increase of deaths from these dangerous and

prevalent diseases of infancy—diseases that almost always demand early medical attention, good nursing, and all the auxiliaries of competency.

Having thus performed a public duty, and taken an impartial review of this important question, the length of which its consequence, we trust, will excuse, we shall dismiss it, under the persuasion that, having altogether undergone an ample and sufficient investigation, it requires no further comment.

PART I.

ORIGINAL COMMUNICATIONS.

I.

A General View of the Diseases usually occurring in Boys during the Period between Infancy and Puberty, deduced from Observation of those in Christ's Hospital. By HENRY FIELD, Member of the Society of Apothecaries, London, and Apothecary to Christ's Hospital.

(Continued from Page 274, Volume II.)

TABLE OF DISEASES, 1814.	Sept.	Oct.	Nov.
1 Cynanche Tonsillaris	7	8	4
2 Rheumatismus acutus	1	—	—
3 Tussis Catarrhalis	1	—	5
4 Febris Synochus	3	1	2
5 Odontalgia Catarrhalis	2	—	1
6 Otalgia	—	1	—
7 Obstipatio	2	—	2
8 Nausea, Gastrodynia, and Diarrhœa	11	6	7
9 Urticaria	—	1	—
10 Herpes Zoster	1	—	—
11 Prurigo Mitis	—	1	—
12 Erythema Nodosum	—	2	—
13 Scabies	—	2	—
14 Vertigo	—	1	—
15 Parotis benigna *(Sauvage)*	1	—	—
16 Epilepsia	1	—	—
17 Ascarides	1	—	—
Total. . .	31	23	21

I HAVE again the satisfaction to report the favorable state of health which has continued among the boys upon this founda-

tion. The autumnal quarter has produced a very moderate portion of disease, and what has taken place has been, in general, mild in its nature, and attended with no fatality.

The weather during the last three months has been, upon the whole, very fine. September was warm and pleasant. October, except in the second week, when there was a sharp frost, fair and seasonable; and November generally mild. Much rain fell during the latter month.

The most frequent disorders have been derangements of the primæ viæ, and inflammatory sore throats. The former prevailed chiefly in September, a month in which affections of this kind were to be expected, and in which the state of the atmosphere would contribute to increase the evils frequently arising from improper articles being taken into the stomach; which is, as was mentioned on a former occasion, too often the case with school-boys.

The sore throats, though somewhat numerous, were in general mild.

During the month of November, a few instances occurred of catarrh. They may be considered as having been somewhat severe, being attended with febrile symptoms, much cough, the respiration more or less difficult, and in one instance very considerably impeded.

Where emetics, purgatives, and antimonial medicines have not speedily relieved the patient, I have found blisters applied to the sternum very efficacious. In all these catarrhs, recovery has been tedious, and a repetition of the blister has been sometimes requisite.

Erythema nodosum is a disease not unfrequently met with in the boys of Christ's Hospital. It has been very well depicted, as well as described by Dr. Willan. It usually affects the forepart of the legs, in the form of red patches, from half an inch to an inch, or thereabout, in diameter; the central parts are very gradually elevated, forming hard and somewhat painful protuberances, continuing from a week to ten or twelve days, diminishing and softening by degrees, and then totally subsiding. After the seventh or eighth day, the red colour changes to bluish or livid; and the parts have the appearance of bruises. There is not the least tendency to suppuration or ulceration; but the cuticle ultimately separates in a scurf. Dr. Willan had seen it only in females. He mentions affections of the stomach, with febrile symptoms, as preceding the eruption several days. This may possibly have been the case with my patients, but in them it must have been very slight, as I have scarcely ever been called upon to attend to them, until the eruption had actually appeared. Confinement to bed, with saline remedies and occasional purgatives, is the whole curative treatment that I have found necessary in these cases. Dr. Willan

mentions, in the decline of the disease, cinchona, wine, and sulphuric acid as suitable remedies. In severe cases, attended with proportional debility, these must undoubtedly be useful; but I have never seen reason for employing them.

Having now, in these reports, completed the period of a year, I shall subjoin a few remarks.

I consider this period to have been particularly healthy. With the exception of the first month, (December 1813,) no epidemic disease whatever has appeared in the hospital. The deaths have been only two; one, a case of enteritis, in December last; the other of typhus fever, in May*: and both of them boys between 14 and 15 years of age. There has been much less sickness and considerably smaller mortality than have occurred in any year since I have had the care of this establishment; and, as will presently appear, much below the usual average of deaths. The total number of boys admitted into the Infirmary, and included in these reports, has been 310.

There is in my possession a register of boys admitted into the Infirmary, with the number of deaths which took place, during 40 years; namely, from April 1759 to April 1799. This register was kept by the late Mr. Roberts, who was Apothecary to this House, nearly, if not quite, the whole of that time; and in which office he succeded his father. Of the correctness of this statement, there can be no doubt; and as the total number of boys in the school has not materially varied during the period in question, it must be considered an important document in the general history of mortality.

The total number of deaths from diseases, according to this register, was 173, making an annual average of four and one third, and being a proportion to the number of boys of about 1 to 150. I am not, at present, prepared to bring down this account to the present time, but shall probably at some future opportunity undertake it.

Christ's Hospital, December 9, 1814.

II.

A Case of Hydrophobia. By Robert Bellingham, Surgeon-Apothecary, Bourn, Lincolnshire.

The attention and the hopes of the medical world have been of late so strongly excited by the publications of Dr. Shoolbred on the subject of Hydrophobia, that it would be a posi-

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* See *Repository,* vol. i. p. 283; vol. ii. p. 41.

tive dereliction of duty, to withhold the communication of the following case of that terrible and untractable disease. It would have afforded, however, much more satisfaction to have been able to support the practice which Dr. Shoolbred has recommended, by the publication of an instance of its successful employment, than to lessen its claims to our confidence by another example of its failure.

As far as a single case can be regarded as fixing any principle (and happily an accumulation of facts upon this subject is not likely to fall within the practice of any one), this case deserves to be recorded: inasmuch as it will appear, that the system of depletion had the fairest and the fullest trial.

William Percival, aged three years and a half, a child possessing unusual quickness and intelligence, was bitten on the 13th of October, in the inside of the upper lip, by a dog who had betrayed no previous symptoms of madness, although suspected of having been bitten some time before by another dog who was in a rabid state. The child was immediately brought by his father to Mr. Holland, surgeon, at Market Deeping, under whose care he afterwards remained. In conjunction with Mr. Holland, I also attended the patient in the sequel; and at his request, and with his assistance, made minutes of the case, and now present them to the public; being furnished by him with the particulars antecedent to the accession of the hydrophobic symptoms. As the wound was slight and superficial, being rather an abrasion of the delicate cuticle of the part, than a laceration of its substance; and as there was no proof of the rabid state of the animal by whom it was inflicted, Mr. Holland, supported by the opinion of another surgeon who happened to be present, merely applied the potassa fusa freely to the part, so as to produce extensive sloughing. This application was occasionally repeated during the ensuing month, so as to occasion successive sloughs; and the child remained in perfect health until the 16th of November.

About eight A. M. of the 17th, the father came to Mr. Holland, in great alarm for the safety of his child. At nine o'clock that morning, when we first visited him, we received the following relation. The child had betrayed some marks of indisposition the evening before—had been fretful—complained of head-ache, which was attributed to a fall he received the day before, by which one eye was considerably bruised—and he passed a restless night, with general symptoms of fever; but no particular alarm was excited till about 7 A. M. when in attempting to drink tea, he was observed to have difficulty in deglutition, and to attempt it with much reluctance.—The following were the existing symptoms. The child appeared dull and listless—the eyes were heavy—the pulse small and

thready, about 120 in the minute—the tongue moist, but covered with a brownish fur; and the bowels regular. When questioned as to the seat of pain, he pointed constantly to the throat, about the thyroid cartilage, and occasionally to the head. On being offered a little gruel, he refused; but with some persuasion, and not without some effort, he swallowed about a spoonful; and evidently, both before and at the moment of swallowing, with a spasmodic action of the muscles of deglutition, although not severe. A vein of the arm was opened, and suffered to bleed by a free orifice ad deliquium; the quantity taken away being eleven ounces. The pulse immediately sunk to 60. A warm bath was ordered to be in readiness, but the prostration remained so great, that its employment was postponed.

℞ Hydrarg. Submur. Pulv. Antim. ā ā gr. i.
Pulv. Jalapæ gr. ij. Misce,—pro pulvere 2da quaque horâ sumendo.

At half-past three P. M. our visit was repeated. He had taken four powders without effect, and had constantly refused either food or drink. The spasms had increased but little in frequency or violence; the pulse was 140, and fuller; and the blood exhibited no inflammatory appearances. A basin of water being brought, the patient was desired to immerse his hand: this he attempted, but shrunk back before it touched the water, with much agitation. On his hand being forced into it, the organs of deglutition were, evidently, much affected. The wounded part shewed no altered or unnatural appearance. No evacuation having been procured, enemas were ordered to be injected, containing magnesiæ sulphatis et ol. Ricini ā.ā ℥ss. Continuentur pulveres.

At half-past twelve (midnight), we found that our little patient had been very restless for about three hours; but was now quiet. The attendants had more than once thought him expiring. The pulse was 144, and much fuller. Some water was shewn to him in a glass, of which he was urged to drink, but as usual refused: even the agitation of it with a spoon, although removed entirely from his sight, sensibly affected him. The powders had not yet acted; and the enemas having been neglected, one was now immediately administered. The bandage was removed from the arm, and eight ounces of blood taken away, which flowed with great force and freedom, without the application of any ligature above the orifice in the vein. The arterial action seemed at this time to be very great; but the blood displayed no inflammatory character, although its crassamentum was more decidedly tenacious than the former. He still referred his uneasiness entirely to the throat and head; but seemed perfectly easy about the stomach, and evinced no

sensation of tenderness on its being pressed; although upon this point he was repeatedly interrogated, and the region of that viscus examined by the hand. After this bleeding, he was for the space of a minute violently and universally convulsed; but on being returned to his bed, expressed himself perfectly free from pain.

℞. Hydr. Submur. Pulv. Antim. ā ā gr. i.
Pulv. Opii. gr. ½. Misce. Fiat pulvis tertia, quaque hora sumendus.

The pulse, at the time of our leaving him, was 120. The urine was pale in colour, and deposited a whitish sediment. The glyster was ordered to be repeated in two hours, if required. It operated briskly in less than an hour, and he remained more tranquil till five o'clock in the morning, when the spasms became more violent and general, and returned in more rapid succession till nine, when he expired in a severe convulsive struggle.

Two of the powders had been swallowed with great eagerness and with increased difficulty, but without procuring any rest. His senses remained perfect to the last moment. No discharge of saliva was observed, nor were the organs of respiration particularly affected.

Dr. Skrimshire, of Peterborough, had been sent for, but he arrived too late. By him, as well as subsequently by Mr. Holland and myself, every persuasive argument was urged, in order to obtain permission to inspect the body; but the prejudices of the friends could not possibly be surmounted, and I very much regret, that in this respect the narration of the case is incomplete.

How far the appearances on dissection would have tended in this case to establish or refute the identity, or at least the analogy between this disease and gastritis, it is impossible to determine. In the rapid progress of the case however, this point was not lost sight of; and as far as the most attentive survey of the symptoms would enable me to form a conclusion, that would be adverse to such a supposition. The following are the reasons which led to this opinion: first, there was never any references of pain to the region of the stomach, although the child was repeatedly questioned upon that point;—secondly, there was apparently no tenderness on pressure, although the examination was made in the most careful manner;—thirdly, the fluids and the medicines he swallowed were never rejected; nor was there even a disposition to sickness;—fourthly, there was not that peculiar cast of features, that look of anxiety and anguish, which are so characteristic of gastritis; his countenance expressing more of restlessness than anxiety. It is worthy of remark, that after the first copious bleeding, for I

consider the detraction of eleven ounces from a patient three years and a half old as copious, and the pulse had fallen sixty beats, it soon increased considerably both in frequency and strength. The temperature of the skin was never much beyond the general standard.

Every one who takes the trouble of perusing this case will, of course, form his own conclusions; nor would I presume, or even wish to direct or influence them: for myself I confess, though I should be far from sanguine as to the issue, should a similar case recur within my observation, yet with the same increased action of the arterial system, the same marks of a tendency to inflammation, I should still be disposed to say, "melius est anceps remedium experiri quam nullum."

Of the powers of mercury, either prophylactic or curative, I entertain much doubt; I should even suspect it of increasing rather than allaying the morbid irritability of the system; but it may, I think, be a question, whether the liberal employment of opium, or some other powerful narcotic, might be compatible with the vigorous use of the lancet?

November 27th, 1814.

Observations by the Editors.

We think no apology to our readers, or to the author of the foregoing paper, is necessary for subjoining our remarks on a disease of which so many cases have been published, without the results leading to any certain method of treatment. Although we are inclined to allow, that much of this want of success must be attributed to the unmanageable nature of the disease itself; yet it is partly to be assigned to inattention in gaining a knowledge of the early stages of the attack, owing to practitioners losing sight of the patients who are brought to them when bitten; from their attentions, in the majority of cases, having been sufficiently roused only when the most characteristic symptom of the disease, the difficulty and dread of deglutition*, has presented itself; and by their minds having been

* The name *Hydrophobia,* at first applied to the disease from the supposition that the patients had an actual dread of water, has probably tended in some degree to mislead. Dr. Marshall, in our opinion, justly remarks, "that the dread expressed is not of the water, but of the act of deglutition." *(Marshall's Anatomy of the Brain,* &c. p. 80.*)* It may, however, be said, that the sight of water produces this dread: but in that case, the sight of the water associates with it the idea of deglutition. Mead proposed to name the disease *Dyscataposis,* difficulty of swallowing; Dr. Ferriar suggested *Brachypotia;* but neither of these terms express the dread which is present.

chiefly directed to this symptom. In treating the disease, also, much time has been, frequently, lost by trying remedies, which experience has proved to be either useless or injurious; or, if a new remedy has been suggested, the selection has too often been directed more by fancy, or empyricism, than by reasoning upon the nature of the symptoms, or the appearances presented by dissection.

When a person who has been bitten by a dog is brought to a surgeon, the first inquiries which naturally suggest themselves, regard the state of the health of the animal that has inflicted the wound, and the circumstances attending the infliction of it; or whether the dog was acting defensively or offensively. If the animal be apparently well, and had been irritated to attack the individual, it becomes a question, whether a surgeon be authorized to inflict more pain by the excision of the lacerated parts? In answer to this query, it may be stated, that "a dog may be rabid, without exhibiting symptoms either of madness or hydrophobia*," and yet the bite of this animal, when irritated, produce hydrophobia: and, notwithstanding the advice of a learned physician†, to delay the operation until the disease be ascertained to be present in the dog, it has been found "that the complete excision of the lacerated parts, two days after the infliction of the wounds," cannot be depended upon as a prophylactic‡. But when it is ascertained that the individual has been attacked by the animal without any cause of irritation, no time should be lost in completely and carefully extirpating the wounded parts. The foregoing case, and many others, have clearly proved the little reliance which is to be placed on escharotics§. When the part has been excised, and the wounds have healed, the practitioner too frequently dismisses his patient, and all anxiety regarding his future health. In our opinion, however, in either state of the case; both for the safety of the patient, and the credit of the surgeon; and with the view of obtaining a knowledge of the circumstances connected with the first appearance of the hydrophobic action in the system, by which, only, can we hope to institute a rational mode of treatment; an accurate memorandum of the case should be kept; frequent inquiries made regarding the state of the patient's health; and the appearances of the wounded parts, for a considerable time after they have been healed, frequently examined.

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* *Rees's Cyclopedia,* art Dog. See a Case of Hydrophobia, by Mr. Parkinson of Hoxton, *Repository,* vol. i. p. 289.

† *Med. Trans. of the College of Physicians,* vol. iv. p. 177.

‡ *Edin. Med. and Surg. Journal,* vol. x. p. 30.

§ *Repository,* vol. ii. p. 178.

Although Mr. Bellingham states, (and the same remark has been frequently made in descriptions of cases of hydrophobia,) that the parts which were bitten shewed no appearance of inflammation immediately before the symptoms of hydrophobia were apparent, yet we cannot admit the evidence to be conclusive; on the contrary, we are inclined to regard, as a general occurrence, the remark of the late Dr. Marshall, who was a very minute observer, that the attack of the disease is immediately preceded by inflammation in the wounded parts: and who was of opinion that the first stage of it is apparently local, "accompanied with a general irritation of the heart and arteries*." Indeed, reasoning analogically from our knowledge of the progressive effects of the virus of any disease which can be communicated by inoculation, when introduced into any part of the body, we should be led to form a similar conclusion. Until a local irritation and inflammatory action are excited by the virus, it is probable absorption does not in any instance take place; and the great length of time which sometimes passes after the person has been bitten before hydrophobia shews itself, may be owing to the absence of the predisposition necessary for exciting, even, the local action of the virus inserted by the bite. Although this ought not to operate as an argument against the immediate excision of a bitten part, yet, supposing it to be the real state of the case, and that the only chance of being useful is in the first stage of the disease, the importance of obtaining the earliest information on this point is manifest; and particular directions ought to be given to patients or their friends, to give immediate intelligence of the slightest appearance of redness or swelling in the wounded parts. How far another excision at this period might be useful; or whether copious bleedings and evacuations, both by means of emetics and purgatives, would conduce to break the diseased catenation of symptoms in so early a stage, future experience must determine: but the probability is that they would be beneficial. If the excision of the part, in which the virus of small-pox, syphilis, or any similar disease is deposited, after the local action has evidently commenced, prevent absorption, and, consequently, the formation of the general disease; what reason is there for supposing, that the same effect would not result from this ope-

* *Marshall's Morbid Anatomy of the Brain in Mania and Hydrophobia,* p. 73. The following fact, mentioned by M. Paroisse, may be regarded as confirming further the Doctor's opinion. Speaking of a grenadier, who died of hydrophobia, in the hospital at Soissons, from a bite he had received six weeks before at Quesnoy, but which had been neglected, he says, "On trouva que la cicatrice de la plaie, qui étoit très petite, étoit devenue rouge, et s'étoit rouverte." *(Bibliotheque Medicale,* t. xliii. p. 27.)

ration, at the same period, in the case of the bite of a rabid animal? Such is the treatment we would suggest, when the individual is taken to the surgeon, immediately after he has been bitten: but it may happen that his assistance is not requested until the consequent disease has already appeared.

When a practitioner is required to visit a person labouring under hydrophobia, it may be requisite that he should bear in recollection, that diseases resembling hydrophobia have arisen spontaneously or independently of the bite of a rabid animal. "Testis fui," says Heberden, "haud mediocris timoris aquæ, vel cujusvis liquoris, ultra quam dolor devorandi intulisset, in ægro, cujus fauces inflammatæ erant, et dein suppuratæ*." He adds, that he had never seen a case of hydrophobia from the bite of a rabid animal. But let us suppose it has been well ascertained that the disease has originated from the bite of a mad-dog; the great consideration is, to determine on what principles the treatment is to be regulated: and when we have made our selection, the next object is promptitude of action†.

Fatal experience has proved that there is no specific antidote for hydrophobia. From the period in which Galen believed he had found a specific in calcined crab's claws, to the present time, almost every article in the Materia Medica has had its reputation, and each has produced its share of disappointment. Sulphate of iron, arsenic, lead and its preparations‡, verdigris, mercurial preparations, olive oil both taken internally and externally applied, opium§ alone and combined with musk, hyosciamus, Atropa belladonna, both the root‖ and the extract, Thalictrum *flavum* and *angustifolium*, Delphinium *consolida*[a], tobacco[b], phosphorated water, cantharides[c],

* *Commentarii de Morb. Hist. et cur.* p. 186.

† Hydrophobia and rabies are often confounded. An animal may be rabid, yet not hydrophobic; and vice versa.

‡ Dr. Yellowly prescribed the superacetate of lead as a sedative, in Mr. Parkinson's case, but without any apparent benefit. See *Repository*, vol. i. p. 291.

§ Solutions of opium have even been injected into the veins by M. Dupuytren. *Ibid.* vol. ii. p. 514.

‖ The first was proposed by Munch, and tried by Richter, who affirms that it proved successful in several instances. For the mode of giving it, and the doses, see *Bibliotheque Med.* vol. xliii. p. 41, 42, and *Repository*, vol. ii. p. 209.

[a] These plants are regarded as specifics in the government of Orel. *Ibid.* vol. ii. p. 153.

[b] Tobacco glysters were exhibited with apparent advantage in a case detailed by Mr. Sawrey. Vide *Marshall's Anat. of the Brain*, &c. p. 135, 136.

[c] The vaunted remedy purchased by the king of Prussia from a Silesian peasant, consisted of two species of meloe; the M. *proscarabæus*, and M. *majalis*.

the poison of the viper*, carbonate of ammonia, soap lees, vinegar, warm baths, and even asphyxia, have each been administered, and cried up by many who have vouched for their efficacy as specifics, till the experience of more impartial observers has exposed the futility of their pretensions. No practitioner, therefore, in our opinion, is justifiable in trusting the safety of a patient labouring under hydrophobia to these remedies. It becomes, then, a question, whether any treatment, with a rational prospect of success, has yet been proposed, or can be suggested, by taking the indications of cure from a careful review of the symptoms, and the appearances observed in the morbid dissections of those who have died hydrophobic?

The symptoms which characterize hydrophobia, independent of the dread of taking fluids or of deglutition, are at first those which mark diseases of increased action, arising from local irritation; and afterwards the functions of the brain are powerfully affected. The most prominent are quickness and threadiness of the pulse, a copious secretion of viscid mucus in the mouth and throat†, constipation of the bowels, ischuria, glistening of the eyes, with dilatation of the pupils, profuse perspiration, and, except that the patients are seldom furious, symptoms resembling phrenitis. Respiration is, also, frequently impeded, with an obscure sensation of tightness at the lower part of the chest, resembling that which occurs in tetanus. In searching, by means of anatomy, for the morbid changes which produce these symptoms, we must regret that little satisfaction has been derived; although the general appearances have been very varied; yet, in almost all the dissections, certain indications of inflammation have been perceptible, more frequently in some part of the space between the pharynx and the cardiac extremity of the stomach‡, in the stomach it-

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* This was tried on a woman, in the hospital de la Charité in Paris, in 1810, and the case published in the *Journal de Medicine.* The object proposed was "d'engourdir le principe vital;" the disease being supposed "exalter le principe de la vie."

† The most remarkable feature in Mr. Bellingham's case is the absence of this symptom.

‡ "Dissectio cadaverum docuit, plerumque organa deglutiendi utcunque inflammata." *Boerhaave, Aphorism.* 1140. "Inveniebatur œsophagus phlogosi tactus." *Lieutaud,* t. i. p. 369. "Maculæ atro-rubræ œsophago sunt inustæ." *Sano Nosol. Meth.* t. iv. p. 356. Rush found the glotis and epiglotis inflamed. *Med. Observ. and Inquiries,* vol. ii. p. 326. For other instances, see also, *Journal de Medicine for November* 1812. *Annual Medical Register,* vol. i. p. 360. *Marshall's Anatomy of the Brain,* &c. p. 94. *Abridgement of the Phil. Trans.* vol. v. p. 369. *Journal de Med. Chirurg. et Pharm.* t. xiii. *Medico-Chirurg. Trans.* vol. i. p. 154.

self*, in the lungs†, and the choroid plexus with the membranes of the brain‡.

If the only rational practice, in the treatment of disease, be that which is founded on clinical and anatomical observations; and if the correctness of the premises we have laid down be admitted, the conclusion will scarcely be denied; that the method of treating hydrophobia, which promises the greatest likelihood of success, is that which tends to lower the morbidly increased excitement, and allay the extreme irritability consequent to it. The means best adapted for this purpose are, blood-letting, vomiting, and purging, with the occasional aid of sedatives. Each of these remedies have been resorted to with various degrees of success; but probably too much has been expected from the employment of any one of them; for in no case on record have the whole been employed in such a manner as to permit the value of their united influence to be fairly appreciated.

The employment of bleeding in hydrophobia is not confined to the present age, as has been supposed by some persons. In the *Histoire de l'Academie des Sciences, an.* 1669, (p. 58,) a case of hydrophobia is described, treated by blood-letting. Mead recommended it "ad animi usque deliquium§;" Boerhaave says, "statim post prima signa invadentis mali morbus tractandus, ut summus inflammatorius, mittendo sanguinem ex lato vulnere magni vasis ad animi deliquium usque‖:" and the practice was more recently recommended on most rational grounds by Dr. Ferriar[a]. But the most successful cases

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* *Transactions of the Med. Soc. of London,* vol. i. part i. art. 4.

† "Pulmo pleuræ adherens, concreti sanguinis molem referebat." *Lieutaud. Hist. Anat. Med.* t. i. p. 445. obs. 39. "Pulmones conspiciuntur nigri et graveolentes." *Morgagni de Sed. et Caus. Morb.* Ep. viii. No. 20. See also *Marshall,* l. c. p. 94. *Abridgement of the Phil. Trans.* vol. v. p. 369. *Journal de Med. Chirurg. et Pharm.* t. xiii.

‡ *Marshall,* l. c. p. 98, 100, 141. *Medico-Chirurg. Trans.* vol. i. p. 154. One of the most singular appearances which has been observed, is that described by M. Gorcy; viz.—the iris exhibited, for some hours after death, the same motions as in life; the pupils dilated on the eyes being shaded, and again contracted on the admission of light as vividly as during life. *Journal de Med. Chirurg.* &c. t. xiii. p. 108.

§ *Mead de Ven.* tent iii. p. 207.

‖ *Aphorism,* 1144.

[a] Vide *Medical Histories and Enquiries.* The *Journal Encyclopedique* for September 1761, contains an account of a woman who was cured of hydrophobia by an accidental wound in the temple, from which the blood flowed until she fainted.

from the employment of the lancet, and those which have excited the most attention, are those of Mr. Tymon*, Dr. Shoolbred†, Mr. Wynne‡, and Dr. Burton§; in all of which the blood was drawn from a large orifice, and the flow continued ad deliquium animi. Several cases, however, have been published‖, which have terminated fatally, although blood-letting has been employed; but probably in all of them, except in the case of Dr. Rutherford of Edinburgh, the failure may be attributed to the small quantity of blood taken away, or the advanced stage of the disease in which bleeding was employed. The former might be the cause of Mr. Bellingham's want of success, with whose assertion, "that the system of depletion had the fairest and the fullest trial," we cannot accord.

With regard to vomiting, if any inference may be drawn from a solitary case, some benefit may be expected from its employment in hydrophobia. In a case related by Dr. Satterly in the *Transactions of the College of Physicians*, vol. iv., the good effects of vomiting were very evident; for while it continued, the convulsions were suspended, and fluids swallowed without difficulty; and the worst symptoms recurred only when it was stopped by means of opium. What would be its effects in conjunction with blood-letting?

No particular facts have been recorded of any advantages having been obtained from the use of purgatives. But as costiveness is a constant attendant of the disease, and purging has proved useful in tetanus and epilepsy, the probability is, that it may prove beneficial in hydrophobia.

We have mentioned sedatives. Of this class of remedies the experiments of Richter lead us to place some reliance on belladonna; and this is probably strengthened by some observations on its effects in tic douloureux. We are also of opinion that some recent cases of the successful termination of epilepsy and tetanus, from the employment of spirit of turpentine, authorize the trial of that remedy, in conjunction with blood-letting and vomiting: but on these chiefly must the practitioner rely.

Upon the whole we think we may conclude,

1. That the real nature of hydrophobia would be much elucidated, by not losing sight of the person who has been bitten, even when the part has been excised; so as to obtain a knowledge of the first symptoms of the attack of the disease.

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* *Edin. Med. and Surg. Journal,* vol. ix. p. 24.

† *Ibid,* p. 30.

‡ *Particulars of the successful Treatment of a Case of Hydrophobia,* by R. Wynne, &c.

§ *Phil. Mag. Aug.* 1805.

‖ *Edin. Med. and Surg. Journal,* vol. x. p. 26. *Repository,* vol. ii. 208.

2. That excision of the bitten part is the only prophylactic to be depended on.

3. That benefit is likely to ensue from a second excision, at the moment when symptoms of heat, irritation, or inflammation are observed in the bitten part*.

4. That no drug is known which possesses the power of arresting the symptoms of hydrophobia.

5. That experience authorizes the placing confidence in bleeding ad deliquium; on vomiting; and perhaps on the use of Atropa belladonna; and on tobacco, exhibited as a glyster.

6. That it is probable, advantage would result from the combined employment of bleeding, vomiting, and purging, in the early stage of the disease.

7. That analogy recommends the trial of spirit of turpentine in the convulsive stage of the disease.

In closing our remarks we must acknowledge, that we have not reasoned from personal experience, which has been extremely limited; but in placing before our readers a summary of what has been done, probably the loss of time and the disappointment which follow the use of ineffectual remedies may be saved, and some hints suggested for removing the opprobrium not unjustly cast upon the profession, for the practice usually adopted in this formidable disease. T.

PART II.

ANALYTICAL REVIEW.

I.

A Treatise on the supposed Hereditary Properties of Diseases, containing Remarks on the unfounded Theories and ill-judged Cautions consequent on such erroneous Opinions, with Notes illustrative of the subject, particularly in Madness and Scrofula. By Joseph Adams, M. D. F. L. S., Licentiate of the London College of Physicians, &c. &c. 8vo. pp. 125. London. Callow.

In every science there are certain general subjects, which have considerable effect in influencing the happiness of society,

* Dr. Marcet's remark, that at the moment the symptoms of hydrophobia are developed, the pain beginning in the bitten part appears "to follow the course of the nerves rather than that of the absorbents," gives much weight to this conclusion.—*Medico-Chirurg. Trans.* vol. i. p. 156.

advancing or decreasing the sum of general good, according to the casts of opinions embraced by the authors who bring them before the public, and the degree of celebrity enjoyed by their promulgators. This is particularly the case in medicine; and demands the chief attention of the critic. We are fully aware, that, in discharging our functions as reviewers, much responsibility is attached to us, whether our judgments be favourable or adverse to the opinions contained in the work that comes under our examination. With this in view, as the title of the Treatise now before us is calculated to obtain for it an extensive notice; and as it professes to combat long established opinions, on a subject of primary importance to a large proportion of the population of these kingdoms; we consider it to be our bounden duty to examine closely the doctrines it maintains; give them every support in our power, if they merit it; and, however unpleasant the office may be, expose their fallacy, if they be unfounded. With such impressions of the nature and responsibility of our critical office, we sit down to our task.

After some observations on the indifference, hitherto displayed by medical writers, with regard to the investigation of the laws which regulate those hereditary peculiarities of the human species, the existence of which experience has clearly established; our author proposes the following arrangement of his subject:

"1st. To propose an arrangement, which, after long application to the subject, I have found most convenient in this early stage of inquiry.

"2dly. To illustrate this arrangement by well authenticated facts, and to show their practical importance by inferences which naturally arise from them.

"3dly. To ascertain what provisions are made by Nature to correct any apparent deviations in the human race.

"And, lastly, To see how far these provisions may be imitated or improved by Art."—p. 11, 12.

The proposed arrangement consists in marking the distinction between *family* and *hereditary* peculiarity of constitution; and the period of life and other circumstances under which these peculiarities shew themselves. The first, *family* peculiarity, according to Dr. Adams, is confined to a single generation, or the immediate progeny of the same parents; but the second is traced "from generation to generation." We have certainly no strong objections against granting the propriety of these distinctions to our author, although the terms, in their usual acceptation, have been long regarded as synonimous.

As the periods of life at which such peculiarities discover themselves, are most strongly marked by the diseases induced,

to these our author next directs his attention. He regards as hereditary, or family diseases, those only which are born with the individuals, or are *connate*; and all others which may arise afterwards, he considers "as *hereditary*, or *family susceptibilities.*" Now in both these positions, our author displays a great deficiency of logical precision and accuracy of expression. The first, according to his subsequent reasonings, is in direct opposition to his definition of hereditary disease; for he endeavours to prove, that *connate* diseases are rarely transmitted from one generation to another, being, indeed, more frequently such as cannot be so transmitted; and, in concluding the Treatise, on the faith that his statements should be confirmed by future observations, he expressly states, as the first result of the inquiry,

"That *connate* diseases or privations are not hereditary."—p. 39.

Yet again, in a note on this very result, an instance 'of deaf offspring from a deaf mother,' is adduced, and followed up by this observation:

"After carefully tracing the history of deafness in this family, I have learned, that it is truly hereditary, having occurred in three generations out of four; though in the last, only in a single individual."—p. 124.

With regard to the second, we would ask Dr. Adams, whether we are to consider the words "susceptibilities to certain diseases," as synonimous with the expressions, diseases which are not connate? The literal construction of the terms employed certainly authorize such an explanation; and although the author's meaning may be conjectured, yet we hold it proper, that it should have been also clearly expressed. We would further inquire, whether he means to imply in the words "all others," that every disease which is not *congenital* or *connate*, must necessarily depend on *hereditary* or *family* susceptibility? But lest we should be accused of hypercriticism, we shall extract the passages which have excited these observations:

"Diseases either appear at birth, in which case they are called *congenital* or *connate*; or they arise afterwards.

"The first only can with propriety be called *hereditary* or *family diseases*; all others we should consider as *hereditary* or family susceptibilities to certain diseases."—p. 13.

To proceed—Dr. Adams sub-divides susceptibilities in the following manner:

"If the *family* or *hereditary susceptibility* is such that the disease, though not existing at birth, is afterwards induced without any ex-

ternal causes, or by causes which cannot be distinguished from the functions of the œconomy, such a state may be called A DISPOSITION to the disease.

"But if the susceptibility, though greater than is remarked in other families, is so far less than a disposition as always to require the operation of some external cause to induce the disease; this minor susceptibility may be called A PREDISPOSITION to the disease."—p. 13, 14.

Now although these terms are not new, yet in their application they are in a certain degree objectionable; but as our author has defined them, we will admit their accuracy; and confine our remarks to their application, and the reasonings founded upon them.

Gout is generally considered as an hereditary disease; but, according to our author, the susceptibility only is hereditary. In this complaint, however, both the kinds of susceptibility must be admitted. Thus when it attacks a temperate subject, at an early period of life, without any evident external causes to induce it; the susceptibility, says Dr. Adams, "is such as amounts to a disposition;" but when indulgence, luxury, and the other well-known exciting causes of gout, precede its appearance, "then the hereditary susceptibility amounts only to a predisposition." The same reasoning is applied to madness. Before going further, we must observe, that this reasoning, as far as it relates to the hereditary character of these maladies, according to the common acceptation of the term hereditary, is more specious than solid. If a disease appear in several successive generations of the same family, nearly at the same period of life, without being induced by any external cause, such a disease, we humbly conceive, may, with the greatest propriety, be denominated *hereditary*. No, exclaims our author, the *disposition* to it only is hereditary. But surely this is a mere play upon words: for it will scarcely be denied, that if a disease be a necessary sequence of the birth of the individual affected by it, it is as truly hereditary as the estate which descends to him from the same cause, the right of primogeniture. Our author even admits this truth indirectly, when he remarks, "that in a gouty disposition we cannot expect to prevent the disease; the most we can promise, is to protract the periods of intermission, and to moderate or shorten the paroxysms."—p. 26. But it may be contended, that notwithstanding the hereditary disposition to any particular disease exist, yet from various causes, the individual may pass through life without being attacked; and the disposition, hitherto hereditary, cease altogether in the succeeding generations. We admit such a case; yet we contend, that until this period the disease has been hereditary; for, to borrow our author's language, the disposition

having been the consequence of the birth of so many individuals of successive generations in a direct line, and the disease being a natural sequence of this disposition in all the affected generations, it cannot be regarded otherwise than as hereditary. Nor do we conceive the accuracy of this conclusion lessened by the fact, that the disease may cease in one of the succession, and re-appear in the next generation. The following case, which we quote from Haslam's Observations, is illustrative of this point: "S. F—. Her father's mother was insane, and confined in the hospital. Her father never discovered any symptoms of insanity, and her mother was perfectly sane. Her only sister (she had no brothers) was mad about five years ago and recovered. S. F— has been twice in the hospital*." Indeed it is curious to observe, with what facility even our author falls into the use of the term *hereditary disease* in its common acceptation, notwithstanding the accuracy of language and the nice distinctions he is attempting to establish. Speaking of a family in which three brothers were "each in succession attacked with symptoms of angina pectoris, between the age of forty-seven and fifty;" while others of the family who escaped to the age of fifty "remained free for the remainder of their lives;" he says, "whether the disease was hereditary, or confined to that generation, cannot be ascertained."—p. 29. Again, "I have known even hereditary madness, &c."—p. 75; "one family in which elephantiasis is hereditary,"—p. 86; besides several other examples which might be quoted. We have no doubt the Doctor intended, in these instances, to use the expression, disposition to the disease, and hereditary susceptibility. As such imperfections however may be regarded by our author's admirers, as "pulchro in corpore nævos;" and such as would be noticed by reviewers only, who are universally allowed to be "men of cold tempers and sterile imaginations," we must defend ourselves by declaring, that were our objections to this treatise confined to the meaning of certain terms and logical violations only, we should scarcely think it necessary seriously to combat the opinions of the author, however much these might be at variance with our own; but some of the conclusions drawn by him, under the third and last heads of his subject, are of a character which demands a graver consideration.

In examining "what provision has been made by Nature to correct such hereditary peculiarities," Dr. Adams brings forward the well-established fact, that, throughout the whole of the animated part of the creation, "there is found a dispo-

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* *Observations on Madness and Melancholy*, 2nd Edition, p. 233.

sition in every variety to return to the original form." In diseases also, those which are excited by climate, acting on hereditary predisposition, generally prove fatal at an early period of life, to the individuals most liable to them; and hence the evil in some degree provides its own antidote, by lessening the propagation from diseased sources. The first mentioned causes however, "the provisions of Nature for restoring the original form" in domestic animals, may be so much interrupted, that even deformities may be continued to the succession; in proof of which the following facts are adduced:

"Sir John Sebright informs us, that if a flock of sheep, in which there is any defect, are permitted to breed *in and in*, the defect will gradually increase among them; and Colonel Humphries, by selecting for breeding a marked variety, has succeeded in procuring a flock, all of them with deformed bones."—p. 34.

Our author might have found many instances illustrative of the above position, in the history of the human race. Among the more recent is that recorded by Mr. Carlisle*, respecting the family of Zerah Colburn, the remarkable American calculating boy, who was lately exhibited in London. This boy has five fingers on each hand, and six toes on each foot, a peculiarity which has been propagated in the family for at least four successive generations. Another, as remarkable, is related by Dr. John Hay, of Reading, in America, of an hereditary predisposition to hæmorrhagy, which has existed in the family upwards of a hundred years; the progression being subject to this singular eccentricity, that the children of these bleeders are never the subjects of the predisposition, but the grandsons only by their daughters†.

For the succeeding suggestion, we are willing to give Dr. Adams all due credit. After mentioning the facts stated by Sir John Sebright and Colonel Humphries:

"If," says he, "the same causes operate in man, may we not impute to them, many endemic peculiarities found in certain sequestered districts, which have hitherto been imputed to the water, and other localities?"—p. 34.

But what follows is of a very different character.

"And may we not trace a provision against such a deterioration of the race, in that revealed law, by which any sexual inter-

* *An Account of a Family having hands and feet with supernumerary fingers and toes,* by Anthony Carlisle, F. R. S. *Phil. Trans.* 1814, Part I.

† For an abridgment of Dr. Hay's paper, originally published in the New England Journal, see Part iv. of our present number.

course between near relations is forbidden, on pain of death? This prohibition, as far as we can judge, proves sufficient to prevent the too great influence of such an hereditary cause, since the number of maniacs does not increase in proportion to our encreased population, and the great exciting causes of madness, namely, encreased wealth, and other sources of ambition. Nor is this the only provision we can trace. The worst stages of madness are attended with a total indifference to the sex, not to mention the very general inclination to suicides, which the utmost vigilance cannot always prevent. Seeing then how little is left in so important a concern to the operations of human institutions, have we not reason to be satisfied with the provisions of Nature, and with the Divine commands? Yet, in the most serious of all hereditary peculiarities, the great susceptibility to madness, celibacy has been recommended as a duty. Before we venture to propose measures contrary to one of the strongest impulses of Nature, and to the first blessing which the Almighty bestowed on man, it becomes us seriously to weigh the consequences.

"Were this opinion universal, it would probably produce its effects only on the most amiable and best disposed, whilst the profligate and unprincipled would indulge themselves, regardless of posterity: It is scarcely necessary to hint at the result. To indict marriages with the healthy individuals of such families, might do much towards extinguishing that enthusiasm, which, when well directed, proves the source of those atchievements which aggrandize families, which encrease the glory of nations, and improve the condition of mankind. Nor is this confined to heroes and statesmen, but extends to the effusions of genius, and to the cultivation of the softer virtues." —p. 34, 35, 36.

—"all interference, therefore, with the dictates of Nature, beyond the expression of revealed will, appears unnecessary."—p. 41.

Now we are seriously of opinion, that the promulgation of such a doctrine, deduced from such hasty generalizations, in a work, declared by its author to be "intended for the general reader," (*Preface*, p. vii,) is fraught with the greatest danger to society, by tending to influence the inconsiderate and the interested to assist in breaking down those barriers, which Wisdom and Prudence have set up; to moderate, if not altogether prevent the extension of the most lamentable calamity to which humanity is liable. But lest we be accused of hastily condemning, let us take the passages just quoted in detail, and examine, 1st, the accuracy of the statements they contain; and, 2dly, the propriety of the doctrine deduced from them.

In the first place, does Dr. Adams, in stating it as his opinion that the proscribed sexual intercourse between near relations is quite sufficient to check the increase of madness, mean to assert that the hereditary disposition or predisposition cannot be communicated unless both the parents be affected? The observations of all who have had the best opportunities of

judging are in direct opposition to this belief; and Mr. Haslam, whom we quote as high authority on this subject, states as the result of his own experience, "that where one of the parents has been insane, it is more than probable that the offspring will be similarly affected*." Again, with regard to the remark, "that the worst stages of madness are attended with an indifference to the sex;" we would ask our author, if he means to assert that the progeny of a madman, begotten in any other stage of the disease, will not be hereditarily disposed to mania? It is a well-known fact, that madmen, under various shades of the disease, are often salacious, and subject to priapism. Suicide, certainly, may have some effect; but, how often do we hear of fathers of families falling the victims of this effect of insanity.

In the second place, with regard to the propriety of the doctrine advanced, we would observe, that as our author admits that the *disposition* to madness is hereditary; and, as we must contend that it is by no means certain, although Dr. Adams regards it somewhat in the light of an axiom, that the disease will always appear at a certain period of life when this disposition exists, but not if this period is passed over; it is impossible to say which are, or which shall continue to be the healthy individuals of the families in which the hereditary disposition prevails. The disease may not appear in a few of the individuals of such a family, and yet affect their progeny; as in the instance we have already quoted. Uniform, certain, and infallible transmission, we do not contend for; but who can say, that the descendants of parents, in whose family insanity has for several successive generations appeared in some of the progeny, will remain free from the disease, although the immediate parents may be perfectly sane? Insanity in a mother, we know, may not appear until after the birth of a child; and, yet, that child may become mad at some period of his life†. And cases might also be adduced to shew, that even in a state of hereditary predisposition, which requires the operation of certain external causes, such, for example, as habitual intoxication, or, in the female, the accidental suppression and natural cessation of the catamenia, pregnancy, and child birth, before the disease can be excited; the progeny have been affected with madness. As far, therefore, as the happiness of

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* *Observations on Madness and Melancholy.*

† For a case in point, see Haslam's Observations, 2d edit. p. 233. See, also, *Observations on a Case of Mania,* reported in the Register of Diseases, Part V. of our present Number.

posterity is concerned, it is of very little importance, whether madness be regarded as an hereditary disease, in the common acceptation of the word, or the susceptibility only to it be hereditary; for, if the malady be a necessary, or even a probable consequence of birth, it is certainly adviseable, in either case, to avoid a matrimonial alliance with any individual so situated. Indeed we can see nothing to oppose, but many circumstances of great weight to sustain the wise and prudent opinion, which we will quote in the words of one, whom we have already designated as high authority, that, "parents and guardians, in the disposal, or direction of the choice of their children in marriage, should be informed, that an alliance with a family, where insanity has prevailed, ought to be prohibited*.

We could scarcely avoid smiling at the view which our author takes of the effect that he supposes would ensue, were the interdiction of marriages with the healthy individuals of mad families general. We think it is Pope, who speaks of the alliance of Genius to Madness; and we know the same great poet, in referring to Bethlem Hospital, says,

> "One cell there is, conceal'd from vulgar eye,
> The cave of Poverty and Poetry."
>
> *Dunciad*, book i. v. 33, 34.

Dr. Adams seems to hold nearly the same opinions; for how can we otherwise explain his meaning, in the passage alluded to, than by supposing, that he thinks the enthusiasm which produces heroes, statesmen, and poets, is more likely to be found in those families in which the hereditary disposition to insanity prevails? Although we do not pretend to the honour of belonging to the *genus irritabile*, yet, we would hope, for the sake of the muses, that the remark is not altogether founded on fact: although we are not prepared to deny, that where the imagination is unreined, and kept constantly in play, without being counterbalanced by more solid studies, some description of poets and artists may be more predisposed to insanity; but, as far as those who are addicted to the severer studies, among whom we rank heroes and statesmen, are concerned, no observation, so generally applied, can be less tenable. Dr. Pinel, in his *Traité sur l'Alienation mentale*, states, from his examination of the registers of the *Bicêtre*, "that he found the number of monks and priests very great; also a great many country people, who had been frightened out of their senses by horrid pictures of futurity: many artists, as painters, sculptors, and musicians; some versifiers, in ecstasies with their own pro-

* *Haslam's Observations*, 2d edit. p. 229.

ductions; a considerable number of advocates and attornies: but there did not appear one of those persons accustomed to the equal and habitual exercise of their intellectual faculties; not one naturalist, or natural philosopher of ability; not one chemist; and, for stronger reasons, not one geometrician."—p. 3. Now, although we admit that there are exceptions even to Dr. Pinel's observations, yet we believe it is well ascertained, that the majority of lunatics are persons of previously weak understandings.

Upon the whole, we cannot conjecture what motive could have misled our author so far as to hazard an opinion, which, if not correct, is fraught with such mischief to society. Were he a man, whose necessities were likely to overbear his regard for principle, we could imagine this opinion advanced to gain patronage among those of the higher classes of society, who have the misfortune of inheriting the disposition to this worst of maladies, and yet have daughters for whom alliances must be found: but we cannot, for an instant, suspect Dr. Adams of such unworthy motives. We admired the author of the treatise, "On Morbid Poisons," for his industry in collecting, and his ingenuity in applying facts; but his subsequent works have displayed too great a predilection for generalizing; and we accord with the opinion, that "generalizing in medicine, as well as in other sciences, has its advantages; but we must condemn that hasty use of it, which precludes a proper attention to minute facts."

It may be expected that we should say something of the notes, which occupy more than two-thirds of the volume. Although the author says, in the preface, that they are "not necessary to illustrate the doctrine" of the text, yet, we found them both curious and interesting; particularly the last, from which we would willingly give some extracts, had we not already overshot our limits. They are, however, all characterized by one fault, which we regret to see in any man of talent—a dread lest the public should forget how much it is indebted to him.

"Sum pius Æneas fama super-æthera notus."

VIRGIL.

Now were we to advise, our admonition would be to allow the public to find out his deserts. It seldom fails to do justice in the end. Whereas a man who is over anxious of public applause, not unfrequently becomes the executioner of his own celebrity.

II.

Letters, addressed to His Royal Highness the Duke of Kent, on Consumption. Containing Remarks on the Efficacy of Equable and Artificial Temperature in the Treatment of that Disease, &c. By Thomas Sutton, M.D. of the Royal College of Physicians, &c. &c. 8vo. pp. 59. London. Underwood, 1814.

Some time ago an institution was projected for the cure of consumption, among the lower orders of people, by means of a regulated temperature; and as at the meeting, which was convened for taking the proposed plan into consideration, the Duke of Kent presided, Dr. Sutton has addressed these letters to him, the object of which is to state, in his opinion, insuperable objections against such an institution.

We are desirous to avoid entering, at present, into the consideration of this plan, which, we understand, is about to be tried, under the direction of Dr. Buxton. But several assertions are advanced by Dr. Sutton, in which, we believe, he will not be borne out by the experience of almost any other physician. Thus he says, that those persons in phthisis, who have submitted to a factitious regulated temperature, "have recovered in less proportion, and been sooner precipitated to the grave."—p. 16. That in the poorer class, who could not use it, "a greater number recovered, and, without doubt, that the progress of the disease was much slower to a fatal termination in them."—p. 21. That damp, foggy climates are desirable and salutary for phthisical patients; and the benefit derived from a residence at Sidmouth, in Devonshire, during winter, is to be ascribed to its being "a country subject to great fogs at that season of the year."—p. 33. That probably the advantage of a sea voyage is to be attributed to the moisture of the sea air: and, consequently, that Madeira must be a bad climate for phthisicals; because Dr. Gourlay has asserted that "a drop of dew seldom falls, except in the higher parts of the island."—p. 35.

We conceive it to be our duty to protest against the following unfair mode of drawing an inference.

"'Though (Madeira is),' our author is quoting from Dr. Gourlay, 'so highly beneficial in this disease' (consumption), he afterwards adds; 'before such patients repair to this last haven of health, their malady is, unfortunately, in too many cases, in its last stage, when neither change of climate nor any other remedy whatever can be of service. From what cause this backwardness to an earlier trial of a southern climate proceeds, is not for me to determine; but it would be well if the physicians of such patients were to recommend a change of temperature in the first stage of the ma-

lady,' &c. Thus acknowledging the fatality of the disease among those who repair thither for the purpose of recovery."—pp. 37, 38.

Now Dr. Sutton might, with equal justice, assert, that blood-letting is of no use in pleurisy, because those die in whose cases the use of the lancet is deferred until the disease is near its fatal close.

But we must acknowledge our author has advanced one unanswerable argument against the institution in question, in the wonderful facility with which he cures the disease. Three cases of extraordinary recovery are mentioned, in the last of which the patient had been *three months under a respectable surgeon*, had much cough, never breathed but with pain, "had night sweats, and expectorated considerably." "Yet," says the Doctor, "in fact, she was so well upon my second visit, as to cause me not to think it necessary to repeat it."—p. 45.

We should be sorry to call this quackery; but candour obliges us to confess that it is something very like it.

PART III.

SELECTIONS.

(Postponed for want of Room.)

PART IV.

FOREIGN MEDICAL SCIENCE AND LITERATURE.

PHYSIOLOGY AND PRACTICE OF MEDICINE.

I.—We are convinced our readers will thank us for presenting them with a translation of the following paper by *Professor Chaussier*, extracted from the *Bulletin de la Faculté de Medecine de Paris;* it is intitled, Note *sur une Hernie Congèniale du Cœur*:

"On the 30th of June last, a new-born infant was brought to the Hospital de la Maternité, in whom a soft hemispherical tumour, about an inch high, and two inches and a quarter in breadth, is perceptible at the upper and anterior part of the abdomen; and in which the form and alternate elevations and depressions of the heart, depending on the dilatation and contraction of its ventricles, are very evident to the sight.

" The appearance and size of this tumour, which extends from the anterior and inferior part of the thorax, nearly to the umbilicus, changes every moment according to the state of the respiration. When the child inspires, the heart rises and partly disappears in the thorax; but when it expires, the position of the organ is lower and more advanced, and the movements of its ventricles are very apparent. The size of the tumour is sensibly increased, and it is tenser when the infant cries, and particularly when it is held in the erect position; it diminishes and becomes softer when it is still and laid upon the back, or nearly on the side, with a moderate inflexion of the limbs. A gradual pressure occasions the tumour to disappear; and the heart, the pulsations of which are very sensibly felt, sinks, and appears to re-enter the thorax, but the respiration is rendered more difficult; and when the pressure is taken off, the tumour resumes its usual form, and the heart suddenly starts forward.

" On examining the tumour more narrowly, a large opening or hollow is perceptible at the anterior part and left side of the thorax, which, as far as a correct judgment can be formed, through the thickness of the integuments, commences below the edge of the fourth sternal rib; and is formed by one part of the sternum, and the extremities of the ribs which have been destroyed, or have never attained their proper growth and extension. The superior extremity of the sterno-pubian *(recti)* muscles appears to be deficient, at least on the left side; or rather these muscles are placed so much apart from each other, as to leave an intermediate space covered with skin only, which at the upper part is extremely thin and nearly diaphanous, but appears thicker towards the umbilicus, where it is marked with a large brown blotch of an irregular form. The size of the tumour renders it probable, that it contains a portion of the liver, and that the heart rests upon the convex surface of that organ. Thus from its nature, situation, and the phenomena which attend it, this congenital affection may be referred to the class of herniæ, and is perfectly distinct from *prolapsus*, and other accidental alterations of the situation of the heart.

" This child is in other respects well made; it sucks, and performs well all the other functions which are requisite for insuring its existence; and as it will be retained in the hospital, I shall have an opportunity of observing any alteration which time may produce on it.

" The heart, as well as all the other moveable viscera, may, from various circumstances, be displaced in a greater or less degree. In the best formed men, and those who enjoy the greatest share of health, the situation of this organ, as *Sabatier* (Anat. vol. ii.) observes, changes every instant owing to respiration and the different attitudes which the body assumes. When a person bends forward, it is carried towards the ster-

num, and if we recline on either side, it falls down by its gravity; tumours, abscesses, collections of water in the thorax, or hernial protrusions of the stomach or intestines into the thoracic cavity, may also displace the heart; while at other times, owing to great bulk in pregnancy, or to some diseased state of the abdomen, and particularly when the parietes of this cavity resist strongly the distending power, the diaphragm ascends so much within the thorax, as to push the heart far above its ordinary position. There are instances also in which it sinks down, or is depressed. *Senac* (Traité du Cœur, lib. iv. chap. 8.) mentions a case in which the heart had forced down the diaphragm, which enveloped it as if with a hood, and that its pulsations were felt very strong at the epigastrium; a circumstance which might have been mistaken for a disease of the stomach or of the cœliac trunk.

"Cases are also recorded, in which, by a congenital malformation, the heart has been devoid of pericardium, and altogether out of the thorax. *Regies* mentions, that he dissected two little dogs who had this congenital malformation. *Vanbonais* (Acad. des Scien. 1712) describes a human fœtus, born at the eighth month, the heart of which came out of the thorax by an opening situated at the superior part of that cavity, and hung uncovered, suspended by a neck like a medallion. *Martin Martinez*, in a dissertation printed at Madrid in 1723, and which *Haller* has inserted in the second volume of his *Disp. Anatom.* describes a case of the same kind which he saw at Madrid. *Tourtelle* (Journ. de Med. t. 62) saw, at Besançon, a child who had an opening at the lower part of the thorax, through which the heart protruded, and reached nearly an inch below the umbilicus; but in all these cases, and some others of a similar description, which it would be superfluous to detail, in which the heart was uncovered, and devoid of pericardium, the individuals have died a very short time after birth. This is not, however, always the case when the displaced heart is guarded from the contact of the air, and is covered with the skin.

"I had an opportunity, in the Military Hospital of Dijon, of seeing a soldier, 27 years of age, of a robust constitution, whose heart, situated at the anterior and middle part of the thorax, was covered with skin only, which was thin, even, and free from any vestige of cicatrix. In this subject, whom I examined with much attention, the heart preserved nearly its natural situation, and did not protrude from the thorax. There was a considerable deficiency of the sternum, the upper part only of the bone existing, to which the clavicles and the first rib on each side were articulated. The other ribs, as far as the seventh, apparently wanted either altogether, or in part,

the cartilages which in the ordinary state attaches them to the sternum: they terminated before in a compact, thick, round tubercle, which, as far as it could be ascertained through the integuments, appeared to extend from the one to the other, to unite them, and to serve as a fixed point. The seventh rib preserved its shape, and natural length. It stretched to the medium line, at which it was united and fixed to that of the opposite side by a thick compact tubercle, which appeared to be the abdominal extremity of the sternum. The other parts of the thorax were well formed. The absence of the sternum, however, and the peculiar situation of the ribs, left, at the anterior part of the thorax, a large oblong space, with slightly raised edges, which appeared to be skin only, and through which all the movements of the heart were very strikingly perceptible. In spite of this singular congenital malformation, the individual enjoyed good health; had been many years employed in military service, and had undergone all the fatigues without suffering any accident; and was at this time in the hospital on account of a trifling indisposition only, which soon permitted him to continue his route.

"*M. Ramel* (Journal de Med. t. 49) has described a case, which more closely resembles that which is the principal subject of this paper. A girl of ten years of age had been afflicted from her birth with constant palpitations at the epigastric region, while at the same time she suffered severely by the slightest pressure on that part. It was evident that the heart was situated in the epigastrium, below the diaphragm; yet in removing the compression on the part, which proceeded from wearing corsets, the young girl suffered no further inconvenience, and continued to enjoy good health.

"Many more analogous cases might be adduced, but I shall mention one only, still more extraordinary, which occurred to our late colleague, *Baudelocque;* who informed me, that, in an infant, who had died very soon after birth, he had discovered two distinct hearts, the one situated in the thorax, the other in the abdomen, which were united, and communicated with each other by means of different vascular ramifications. In 1812, I saw an infant in the Hospital de la Maternité, who was singularly deformed in many of its parts; in particular, a hernial tumour protruded at the basis of the umbilical cord, which contained not only the greater part of the abdominal viscera, but the heart also; and that organ, the base of which was found inclined towards the umbilicus, was attached by its apex to the anterior part of the palate (à la partie anterieure du palais). *M. Beclard*, at that time a house pupil of the hospital, to whom I entrusted the particular examination of this fœtus, drew up an account of it, which was published in 1813, in the second number of the Bulletin of the Society."

II.—"Many histories of a disposition to profuse hæmorrhagic discharges from various parts of the human body are extant; but none so characteristic of what may be termed hereditary predisposition to hæmorrhagy, as that in an American family, published by Dr. John Hay, of Reading (America), in the New England Journal.

"The first person of the family in whom this hereditary predisposition is traced to have existed, was Mr. Oliver Appleton, who lived about one hundred years ago, at Ipswich. He was subject from his youth to profuse bleeding from slight causes; and when advanced in life, by a long confinement in bed, the skin was worn from his hips, and a hæmorrhage from those parts, and from the urethra, occasioned his death. Dr. J. Swain, of Reading, married one of Mr. Appleton's daughters, and had by her two sons and five daughters. The two sons both bled to death. During their lives violent hæmorrhages were occasioned by the smallest scratch or injury; the bleeding usually following in about a week after they were hurt.

"Dr. Oliver Swain (a descendant of Dr. J. Swain), July 17, 1770, was kicked by a horse, which laid the bone of the leg open; owing to which, after repeated effusions of blood that were temporarily checked only, he died on the 6th of August, aged 33. Dr. J. Swain, jun. was attacked with violent hæmorrhagy from the prick of a pen-knife, from which he with difficulty recovered. Soon after, bleeding from the lungs occurred, of which he died, aged 30.

"General Benjamin Brown married the eldest daughter of Dr. Thomas Swain, sen.; and they had three sons, two of whom were bleeders (as they are familiarly called): one bled to death at five years of age; the other, now about 54, is still living, and subject to excessive bleedings. He has three daughters: two of them married into the family of Norton; one of them had three children (bleeders), the other had two, one of whom bled to death. Mr. J. Bachilor married another daughter of Dr. J. Swain, sen.; they had three children, bleeders; two of whom are dead; the one that is living bled profusely in 1810."

It is remarked that the children of these bleeders were never the subjects of this predisposition; but the grandsons only by their daughters.

This paper contains the details of hæmorrhages of many other individuals of this family; and of some others, in whom this hereditary predisposition is manifested. The whole is so circumstantially narrated, that the facts appear indisputable.

It has also been observed of these bleeders, that although they may not fall a sacrifice to the hæmorrhages, yet they are short livers: Mr. N. Brown, aged 54, having lived the longest of the race, since Mr. O. Appleton.

CHEMISTRY.

III.—*M. Delamétherie* has published the following notice on the Boracite of Holstein*.

" Cubic crystals were first observed by Lassins, in a gypsum of Lunebourg; but he was unable to determine their nature, and supposed they were quartz.

" Westrumb undertook the analysis of them, and obtained,

Magnesia.....	13	Alumina.....	1
Lime.....	11	Oxide of Iron.....	1
Silex.....	2	Boracic Acid.....	68

But Vauquelin having repeated this analysis, and employed pure transparent crystals, obtained only boracic acid and magnesia, in the following proportions:

Boracic Acid... ..	83.4	Magnesia.....	36.6

" The same substance has been found at Segeberg in Holstein, in a gypsum, according to Steffens, closely resembling that of Lunebourg. I have some specimens of this gypsum of Segeberg. It is of a grayish white colour, presenting little scaly plates like the marbles called *Ssalins*. The crystals of the boracite which are embedded in it, are numerous and perfectly transparent, but small, being only about a line in diameter; and they appear to me to be entire cubes. I have not been able to find any truncated, as is the case among those of Lunebourg.

" *Pfaff* has analysed the boracite of Segeberg; and from eleven grains of it obtained,

Boracic Acid...	6 grains	Silex.....	$0\frac{1}{4}$ grains
Magnesia.....	$3\frac{1}{8}$ ——	Loss.....	$0\frac{1}{16}$ ——
Oxide of Iron...	$0\frac{1}{16}$——		

Whence he concludes, that, in neglecting the silex and the iron, these crystals are composed of

Boracic Acid.....	63.7	Magnesia.....	36.3

IV.—*M. Roux*, in a well-written Treatise on Infectious Fevers, in considering the utility of oxy-muriatic fumigations, proposes the following formula. For a ward, or apartment, 15 metres in length by 6 in breadth, or containing 357 cubic metres (about 10,360 cubic feet), take of

Muriate of Soda.....	184 grammes, about 6 ounces		
Oxide of Manganese....	62 ——	2 ——	
Sulphuric Acid.....	245 ——	8 ——	

When the wards are inhabited, the acid ought to be diluted with an equal bulk of water.

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* *Journal de Physique*, &c. Juillet, an 1814, p. 69.

PART V.

MEDICAL AND PHYSICAL INTELLIGENCE.

I.—LECTURES AND SOCIETIES.

Lecture II. *On the Products of Vegetables.* By Professor Brande, at Apothecaries Hall, London.

"It might appear a hopeless task to the superficial observer to attempt a general inquiry into the nutritive principles or aliments derived from the vegetable kingdom. He would say that they are so numerous, and so different, as to preclude the possibility of such a discussion being reduced to small limits. But this is not the case. For although the individual substances, separately considered, which are used as articles of food are extremely numerous, yet, the *principles* upon which their nutritive quality depends are comparatively few; and their variety results from the infinitely varied combination of these proximate principles.

Previously to particularizing these principles, or entering upon the subject of vegetable aliments, it has been common with writers on the Materia Medica to swell their volumes with dissertations upon the difference between aliments and medicines, and to enter into abstruse disquisitions, at least unprofitable, if not injurious to the student: and it is really grievous to look over the accumulated mass of contradictory facts, erroneous physiology, and unappropriate arguments with which Dr. Cullen has prefaced this part of his otherwise valuable and learned work upon the Materia Medica.

Instead of entering into these disquisitions, I propose to lay before you a brief account of the process of vegetation, and then to dwell upon the modes of separating and examining the products of vegetables in general.

For our information in this important branch of vegetable physiology, we are chiefly indebted to the labours of Brisseau-Mirbel and of Mr. Knight, though much had previously been obtained by the experiments and observations of Hales, Spallanzani, and Linnæus.

But as I intend not to treat this subject historically, and as it would be quite irrelevant to dwell upon the individual discoveries of the persons I have named, I proceed at once to offer you a digest of their united discoveries."

After these prefatory remarks, Mr. B. observed that the structure of seeds would first demand attention, they being the sources of the future plant.

All seeds appear to agree in general structure, though some are much better adapted to elucidate this than others—perhaps none better than the common garden bean.

Seeds consist of three parts—the *cotyledons*, the *radicle*, and the

plumula. The *cotyledons* constitute the chief bulk of the seed; they are its principal nutritive part, both in regard to the young plant, and to the use of seeds as food for animals. They vary in number, but are most commonly two.

When the exterior covering of a seed is removed, a small point is seen projecting from between the lobes, which is the *radicle,* and attached to this is the *plumula,* which however is not visible till the lobes are separated. When a seed is placed in a favourable situation, the capsule bursts, and the various parts are developed. The radicle becomes a root, and descends; the plumula, by a contrary motion, ascends, and becomes the trunk or stem of the plant. When this operation of nature takes place, the seed is said to germinate, and the process is denominated, Germination. There are certain combinations of circumstances indispensable to the healthy progress of germination, and these it will be proper briefly to enumerate.

The first requisite is due access of air; for if a seed be buried too deep in the earth, it remains dormant, and undergoes scarcely any change. This is the reason why, when earth is turned up from some depth and exposed to air, that it generally becomes covered with young plants, the seeds of which are brought to life, as it were, by the contact of air.

Mr. B. then adverted to the constitution of the atmosphere, and stated that although seeds would grow in other gaseous compounds, vegetation only was healthful in common air, in which the proportion of oxygen to nitrogen is about one to four. The properties of oxygen and nitrogen were next alluded to, and some remarks were made upon the ingredients of atmospheric air. Mr. B. also spoke at length upon Mr. Ellis's opinions respecting the change produced by plants upon the atmosphere, and on most points entertained opinions differing from those of that physiologist.

The next requisite alluded to was the presence of a due degree of moisture. In a perfectly dry soil, though other circumstances be favourable, as seed undergoes no change. Mr. Brande stated the composition of water to be by weight, one of hydrogen to 7,5 of oxygen; water is doubtless decomposed during vegetation.

Seeds will not germinate without a certain degree of heat. A temperature between 40° and 80° of Fahrenheit's thermometer is most favourable. But the application of cold does not destroy, but suspends only the vegetating power. At the period of germination light is injurious. *Seeds* exposed to light, it is true, will grow, but not well. *Plants* deprived of light have their properties altered, and light is absolutely necessary to their healthy growth. During the progress of germination the seed undergoes many remarkable changes. A part of the starch of the cotyledons is converted into sugar, which is absorbed by appropriate vessels, for the early nourishment of the young plant. The radicle then throws out rootlets, the plumula begins to expand, and as soon as it reaches the surface, the roots, having acquired strength, support and nourish the vegetable. Thus the cotyledons become useless, and either rot away or are converted into leaves.

Leaves and their functions are highly interesting in vegetable

physiology; but for an explanation of this part of the subject, Mr. B. referred to the papers of Mr. Knight in the Philosophical Transactions.

The root, the trunk, the branches, the leaves, and the flowers, are the remaining organs or parts to be noticed, and of these the three former are of very similar structure; so that of them a general description will suffice. In the leaves are performed peculiar and very intricate functions, and the investigation of these constitutes one of the most curious and interesting departments of Vegetable Physiology. To dwell upon them as they deserve would lead me too far out of my course; so that I shall state no more than is necessary at present to be known, referring you to the interesting experiments of Mr. Knight upon the subject. The functions of the flowers are chiefly for the botanist's consideration—they contain the organs of reproduction, those by which the seed is perfected, and rendered susceptible of the influence of those stimuli which induce the phenomena of germination.

The root not only attaches vegetables to the surface of the earth, but is one of their chief organs of nourishment. It divides into minute ramifications; and these divide again into more and more delicate filaments; but the branches are susceptible of functions analogous to those of the root, and the root to those of the branches. Woodward turned a willow tree upside down---the branches were buried, and soon became the root---the root, exposed to the air, shot into buds, and these expanded into leaves.

A transverse section of the root, or trunk, or branches exhibits nearly the same characters. We discern the bark and wood, and often what is termed the pith.

The bark is covered by a cuticle which, as in animals, protects the more delicate parts below, allowing however of absorption and perspiration through its pores. It differs in texture, and is in some plants siliceous. Below this is the parenchyma or cellular substance, which, when microscopically examined, is made up of hexagonal cells.

The innermost part of the bark is called the *liber*, or cortical layers; and here very important functions are carried on.

The wood is separable into living and dead; the layer nearest the bark is the alburnum or living wood; the internal parts or heart wood, is dead. The alburnum and liber, when examined microscopically, appear made up of a number of tubes of varied aspects, which have been particularly distinguished by Mirbel into simple and porous tubes---tracheæ and false tracheæ. These tubes when microscopically examined, are often observed to be variously perforated; some are composed of a spiral vessel, which, on carefully tearing asunder a succulent leaf, may often be drawn out to a great length: they are also admirably seen in some of the bulbous roots.

These tubes are bound together by concentric and diverging fibres, which are usually called the spurious and silver grain.

The pith is cellular, and appears merely to be a reservoir of moisture for certain plants; though Linnæus conceived it connected with more important functions: and, if I recollect rightly, entertained

the idea of its performing offices analogous to those of the brain and nerves.

The leaves, when examined through a magnifier, appear composed of many tubes, supported by a ligneous skeleton, and covered by a delicate cuticular film; and by them are transacted some of the most essential functions of the vegetable; for not only do they absorb a certain portion of nourishment from the circumambient air, but they also are the great respiratory organ of the plant. Their operation is extremely intricate, and, although investigated by several able experimentalists, has been hitherto but imperfectly developed. Of this, however, we are certain, that in them the ascending sap, exposed to air and light, becomes converted into the descending sap, or *succus proprius* of the plant, and that, in thus undergoing a change, oxygen and moisture are evolved; and when the solar rays are operating upon the leaf, they have the further power of absorbing carbonic acid, decomposing it, and evolving an equal volume of pure oxygen.

The discovery of this fact is due to Dr. Priestly; and though some have regarded his conclusions as erroneous, I am inclined to believe them correct; for, when repeated with caution, they have succeeded in my hands.

These excretory and absorbing powers are evident chiefly upon the under surface of the leaf; the upper surface being generally covered with a natural varnish, preventing moisture settling upon the leaf, and admitting at the same time freely the rays of light.

From the facts now enumerated, it appears that there is a peculiar system of circulation going on in vegetables; that the fluids absorbed by the roots are received into a series of vessels which rise in the wood, and go abundantly to the leaves; that the crude sap is there perfected, and conducted to various parts of the plant, and especially to the inner layer of bark, which it enables to form a new stratum of wood annually. If the descending sap vessels be divided, the sap is accumulated above the divided part; and, consequently, a branch of a tree, thus treated, abounds more in leaves, blossoms, and fruit, and comes sooner to perfection, than where the circulatory vessels remain perfect. This fact has been practically applied by that excellent horticulturist, Mr. Knight. For the same reason, if the bark be wounded, the production of new bark is chiefly on the upper edge of the wound. It appears, however, probable, that there is some other channel by which nutrition may be conveyed to the bark; for M. Palisot de Beauvais insulated several portions of bark upon a tree, and found that they still grew, though not immediately connected with any of the surrounding bark. This is probably effected by delicate anastamosing vessels, which have escaped actual observation, and are known only by their effect.

Royal Society—resumed its meetings on Thursday, the 10th of November, when a paper by Dr. Brewster, on the Optical Properties of Prince Rupert's Drops, was read. On Thursday, the 17th of November, a paper by Dr. Roget was read, describing an arithmetical instrument for involution and evolution.

Linnæan Society—resumed its meetings on Tuesday, the 1st of

November, when a paper by Mr. Sowerby was read on a fossil shell which occurs in chalk, very frequently in the flint nodules. Fragments of it had been observed by Cuvier and Brogniart in the chalk near Paris, and from their fibrous texture, they were led to consider them as fragments of pinnæ; but fom their thickness (near half an inch) they concluded that the shell must have been of enormous size. Mr. Sowerby got specimens of the fossil from various quarters of the chalk country in the south of England. He ascertained, by comparing these specimens with each other, that it was a bivalve shell, having a hinge of a peculiar structure, and constituting a genus apart. To this genus he has given the name of *inoceramus;* and the most common species he calls inoceramus Cuvierii.—At the same meeting, three papers by Mr. Rafanesque Smaltz were read. The first was a description of a new species of fish, which he observed during one of his voyages across the Atlantic. It was a species of *echineis.* The second paper contained a description of a new species of tuber or truffle which vegetates in Sicily. The third paper contained a description of two new genera of crustaceous animals found in the Sicilian seas. Of the first genus, *heterilos,* he described only one species, the *punctatus,* which lives about seven miles from the Sicilian coast, and is never seen on the shore. The species of the second genus, *hyamonus,* described, was found attached to a shark, and appears to live by suction of that fish.—On Tuesday, the 15th of November, a paper by Mr. Sowerby was read, on a genus of fossil shells not yet properly arranged or described by conchologists. The shell is a bivalve, with a triangular opening, and occurs in the liass lime-stone near Bristol, and likewise in flint in chalk. It is figured in the Encyclopedie Methodique, and likewise by Parkinson, who considers it provisionally as a pinna. Mr. Sowerby considers it as constituting a new genus, to which he has given the name of *plagiostoma,* and he describes three species. —At the same meeting, part of a Latin paper by M. Vieillot was read, in which the author gave a new elementary arrangement of birds. It is obviously impossible to form any conception of the merit of such an arrangement merely from hearing it read.

In the sitting on the 7th of July last, of the SOCIETY OF THE FACULTY OF MEDICINE AT PARIS, the celebrated Military Surgeon M. Larrey read a Memoir on Wounds of the Bladder, made by fire-arms; and upon certain foreign bodies left in that viscus. This Memoir, so important, from the nature of its subject, is reserved to form a part of the Memoirs of the Society. M. Larrey has likewise presented to the Society, to be deposited in the Pathological Collection of the Faculty, a ball, some iron bullets, and other substances that had been lodged in various parts of the body, with a note stating the circumstances connected with the wounds from which they had been extracted. —*** We lament to find that English literature is to be indebted to the American Press, (see *Repository,* vol. ii. p. 439,) for a translation of M. Larrey's excellent Memoirs of Military Surgery.

The yearly number of patients of the NEW RUPTURE SOCIETY, hitherto attended by the Surgeon of this Charity, William Blair, Esq. of Great Russel Stseet, most of whom were totally destitute of the necessary apparatus for their personal safety, is as follows:— From July the 6th, 1805 to 1806, 76; 1806 to 1807, 252; 1807 to

1808, 407; 1808 to 1809, 399; 1809 to 1810, 498; 1810 to 1811, 554; 1811 to 1812, 669; 1812 to 1813, 903; 1813 to 1814, 1009.

The following comparative statement, taken from Mr. Blair's register, will shew the proportion and species of herniary cases occurring in each sex:

		Males.	*Females.*
Ruptures	In both groins	1165	24
	In both thighs	4	43
Inguinal	On the right side	1858	62
	On the left side	1073	47
Femoral	On the right side	20	153
	On the left side	17	104
	Naval ruptures	39	206
	Ventral herniæ	6	15
	Intestinal prolapses	26	24
	Uterine prolapses	0	156
	Prolapse of the urinary bladder.	0	1
		4208	835
			4208
	Total Number of Cases		5043

II.—PRIZE QUESTIONS.

The *Medico-Chirurgical Society of Ghent* proposes as the subject of a prize, consisting of a gold medal worth three hundred francs, to be determined at the public sitting of the Society for the year 1815, the following question: "What are the diseases, either internal or external, which, from the appearance they put on, the symptoms by which they are accompanied, or the situation they occupy, may be confounded with venereal complaints: and what are the signs, the phenomena, and the means by which they can be certainly distinguished from the last mentioned affections?"---The essays may be written in Flemish, French, Latin, or English, and should be sent, free of postage, before the end of July 1815, to M. Kluyskens, perpetual Secretary of the Society, each accompanied with a sealed letter, containing the name and address of the author.

The *Societé Royale de Medecine* of Bourdeaux having proposed the following question, last year, as the subject of a prize of three hundred francs, but received one essay only, which was not considered to be worthy of the prize, again proposes it as the subject of the same prize, to be adjudged at the public sitting for 1816: "What are the symptoms, the differences, and the causes, and what is the proper treatment of hydrocephalus internus: pointed out by observation, experience, and morbid anatomy?"---The same Society proposes, also, the following inquiry, as the subject of another prize of three hundred francs, to be adjudged at the same time as the former: "To determine by clinical observations, what, independent of their ordinary properties, are the particular effects which characterize the different species of narcotics; and to indicate, from these effects, the diseases in which one species ought to be preferred to another, and the cases in which it may be necessary to combine them, either with one another, or with other substances, to render them more active or to moderate their action."---The essays must be transmitted, free of

expence, to M. I. M. Caillau, Secretary-general of the Society, accompanied with a sealed letter, containing the name and address of the writer, before the first of July 1816.

III.---LECTURES.

Royal Institution.—The Lectures will commence on Saturday the 28th of January next, and the following arrangements have been made for the ensuing season.—History of the Rise and Progress of Chemical Philosophy, and its Applications to Agriculture and the Arts; with experimental Illustrations, by W. T. Brande, Esq. F.R.S. Prof. Chem. R.I.—Botany, by Sir James Edward Smith, M.D. F.R.S. Pres. Lin. Soc.—Astronomy, by Mr. Lee.—Perspective, by John George Wood, Esq.—On the Principles and Practice of Drawing and Painting, as Branches of Elegant Education, by W. M. Craig, Esq.—Poetry, by T. Campbell, Esq.—On the Poetry of Milton, by the Rev. Edward Forster, A.M. F.R.S. and F.A.S.—On the Philosophy of the Arts, by John Landseer, Esq. F.A.S. Engraver to the King.

Russel Institution.—Mr. Singer will commence a Course of Lectures on Electricity and Electro-Chemistry early in January.

Medical School of St. Thomas's and Guy's Hospital.—The Spring Course of Lectures at these adjoining Hospitals will commence the beginning of January: viz. at St. Thomas's: Anatomy and the Operations of Surgery, by Mr. Astley Cooper and Mr. Henry Cline: Principles and Practice of Surgery, by Mr. Astley Cooper. — At Guy's: Practice of Medicine, by Dr. Babington and Dr. Curry: Chemistry, by Dr. Babington, Dr. Marcet, and Mr. Allen: Experimental Philosophy, by Mr. Allen: Theory of Medicine and Materia Medica, by Dr. Curry and Dr. Cholmeley: Midwifery and Diseases of Womenand Children, by Dr. Haighton: Physiology, or Laws of the Animal Œconomy, by Dr. Haighton: Structure and Diseases of the Teeth, by Mr. Fox. Terms and other Particulars may be learnt at the respective Hospitals.

Medical School of Anatomy, Medicine, &c. Blenheim Street.—Dr. Hooper and Dr. Ager will begin their next Course of Lectures and Examinations on Monday, February 6th, 1815, on the Theory and Practice of Physic, and on Chemistry and the Materia Medica: Mr. Brookes, on Anatomy, Physiology, and Surgery, will begin on Monday, January 23rd; particulars at the Theatre.

Dr. Clarke and Mr. Clarke will begin their next Course of Lectures on Midwifery, and the Diseases of Women and Children, on Monday, January 23rd. The Lectures are read at the House of Mr. Clarke, No. 11, Saville Row, Burlington Gardens.

Dr. Merriman's next Course of Lectures on Midwifery will commence on the 24th of January, at the Middlesex Hospital.

Dr. Davis, Physician, Man-midwife in Ordinary to the Queen's Lying-in Hospital, will commence his Spring Course of Lectures on the Theory and Practice of Midwifery, in Charlotte Street, Bloomsbury, on the 4th of January.

Dr. Clough, Physician-Accoucheur to the St. Mary-le-bone General Dispensary, &c. of Berners Street, will commence his usual course of Lectures on the Science and Practice of Midwifery, including the Diseases of Women and Infants, on Monday, January the 9th.

Dr. Squire, of Ely Place, Holborn, will, on Saturday the 7th of this month, begin a Course of Lectures on the Theory and Practice of Midwifery, and the Diseases of Women and Children.

IV.---MEDICO-SURGICAL INFORMATION.

An Institution for the curing of Diseases of the Eye has been established at Manchester.

Dr. Phillips, of Worcester, has exhibited, in a case of lock-jaw, the essential oil of turpentine, in the form of enema, with the almost instantaneous effect of relaxing the spasm, and setting loose the jaw. The patient was a young lady; and the most active practice had been pursued previously to the exhibition of the turpentine.

V.—APPOINTMENTS.

Dr. C. Hewett, Vice-Master and Senior Fellow of Downing College, has been elected Professor of Medicine to the University of Cambridge, vice Sir Busick Harwood, deceased.

Henry Alexander, Esq. has been appointed Oculist to Her Majesty.

The University of St. Andrew has conferred the Degree of Doctor of Medicine on Mr. John Murray, the Author of the System of Chemistry.

A General Bill of the Diseases, Casualties, Christenings, and Burials, from December 14, 1813, *to December* 13, 1814. *By the Parish Clerks of London.*

Abortive and Stilborn	683	Evil	5	Palpitation of the heart	6
Abscess	71	Fevers of all kinds	908	Palsy	149
Aged	1774	Fistula	5	Pleurisy	19
Ague	2	Flux	10	Quinsy	6
Apoplexy and Suddenly	335	French Pox	12	Rash	1
Asthma	952	Gout	53	Rheumatism	11
Bedridden	1	Gravel, Stone, Strangury	12	Scurvy	8
Bile	9	Grief	1	Shingles	1
Bleeding	21	Head-ache	2	Small Pox	638
Bursten and Rupture	23	Headmoldshot, Horshoe-head, & Water in the Head	421	Sore Throat	6
Cancer	81			Sores and Ulcers	11
Chicken Pox	1	Impostbume	3	Spasm	35
Childbed	216	Inflammation	1008	St. Anthony's Fire	4
Colds	28	Influenza	2	Stoppage in the Stomach	25
Colick, Gripes, &c.	21	Jaundice	57	Surfeit	2
Consumption	4829	Jaw Locked	5	St. Vitus's Dance	1
Convulsions	3418	Lethargy	2	Swelling	1
Cough and Hooping Cough	864	Livergrown	27	Teeth	406
Cramp	1	Lunatic	225	Thrush	68
Croup	85	Measles	817	Tumor	4
Diabetes	1	Miscarriage	1	Tympany	1
Dropsy	782	Mortification	224	Water in the Chest	35
Eaten by Lice	1	Overgrown Head	1	Worms	1

Bit by mad dogs	2	Frighted	5	Scalded	6
Broken limbs	4	Frozen	2	Shot	3
Bruised	4	Killed by a Stag	1	Smothered	1
Burnt	55	Killed by falls and several other accidents	83	Starved	1
Drowned	111			Suffocated	11
Excessive drinking	10	Killed themselves	24		
Executed	10	Murdered	5	Total of Casualties...	348
Found dead	24	Overjoy	1		
Fractured	2	Poisoned	5		

Christened.....Males 10,313.....Females 9857.....In all 20,170
Buried.....Males 10,287.....Females 9496.....In all 19,783

Whereof have died,

Under 2 years of age	5845	Between 40 and 50	1950	100 years of age			
Between 2 and 5	2038	50 60	1810	101			
5 10	770	60 70	1747	102	1		
10 20	649	70 80	1345	108	1		
20 30	1268	80 90	592	111	1		
30 40	1678	90 100	88				

Increased in the Burials this year 2461.

There have been executed in the City of London 17; of which Number 10 only have been reported to be buried within the Bills of Mortality.

A METEOROLOGICAL TABLE,

From November the 21st, to December the 20th, 1814.

KEPT AT DERBY,

Lat. 52°: 58′ N.—Lon. 1°: 30′ W.

M	D	Therm. Morn.	Therm. Day.	Barom.	Hyg.	Wind.	Rain.	Remarks, &c.
	21	30	36	29 .57	310	N.NW.		Fog. F.... St..
	22	22	33	.61	260	NW		Fog..
	23	22	37	.57	255	S.SS.		Fog.. F. Fog..
	24	34	39	.70	219	S.	.65	Fog.. R. R.. in N
	25	37	47	.30	176	SW.	.04	Fog.. C... R. in N
	26	42	45	.12	210	WW.		Fog.. F... C..
S	27	35	40	.52	230	W..W.	.25	C.. F. C.. R. Sn. in N
	28	31	39	.64	210	nwsw.w.sw.	.20	F. F... C.. R. in N
	29	37	44	.25	235	W..SW..	.19	C. C.. R.. in N
	30	35	41	.07	222	SW..N..		C.. C... St..
	1	34	41	.55	245	NW.N..		F..... St..
	2	31	37	.72	256	N.		F.... C... in N
	3	32	35	.80	234	S.E.S.	.12	Fog. Sn.. in N
S	4	30	41	.81	237	S.SW.		C..
	5	32	39	.44	239	W. NW..	.01	R. C.. R.
	6	31	35	.96	239	N.W.	.17	Fog. F.... Sn. in N
	7	30	40	.57	157	S.SW.	.25	Fog... R..
	8	39	47	.18	162	SW..S.	.20	C... R..
	9	46	40	.04	230	Variable	.01	C. R. C. F...
	10	25	32	.55	185	w.ww...	.1 .30	C.. Sn... R...
S	11	41	44	.04	190	N.SW..	.66	C.. R..
	12	38	51	.50	120	sw..s..sw..	.16	R.
	13	50	46	.38	152	SW...W..	.30	Fog. R.... C...
	14	40	47	.42	155	sw..sw...		F.. C..
	15	45	47	.36	134	SW..W..	.60	R..
	16	41	52	.12	130	sw...sw....	.01	R. C... St...
	17	39	48	.54	125	SW..S.		C..
S	18	48	54	.63	187	sw.....sw..		C.. C.
	19	48	42	.55	211	SW..W..	.10	C. R. St...
	20	33	49	30 .12	230	W		C. R F..

The quantity of rain in November, was 2 inches 6-10ths; but since the commencement of this month we have had nearly 4 inches; the tenth was wetter than any day since the heavy storm in July 1811. On November 22 and 23, we had sharp frost. The prevailing winds were W and SW. On the 16th in the morning, a tremendous storm of wind began, and continued during the day, doing considerable damage to tender buildings and walls, one poor woman was killed by the falling of a wall, and another lies in a dangerous state; on the 20th it commenced again but not for so long a period. The range of the thermometer in the night since the last report, is 28°; and the barometer 1.08 inch.

A METEOROLOGICAL JOURNAL,

From the 21st of November, to the 20th of December, 1814,

KEPT AT RICHMOND, YORKSHIRE,

NW from London.

D.	Barometer. Max.		Min.		Therm. Max	Min.	Rain Gage.	Winds.	Weather.
21	29	33	29	33	36	20		NW..	1 S...
22	29	33	29	30	34	22		W.S.	1 S... 2 Cy.. 4 Moonh...
23	29	39	29	33	37	29	.01	S.	1 Sn. 2 S. 3 cy.. 4 Moon..
24	29	17	29	08	41	34	.03	Calm	1 S. 2 Cy.. 3 Mist... 4 R.
25	29	02	28	88	49	40	.05	E.S..	1 S. 3 Mist.. 4 R.
26	29	09	28	98	46	37	.05	W..	1 Mist... 4 R.
27	29	29	29	09	42	30		NW..W..	1 S,.. 3 Cy.. 4 Moon..
28	29	12	28	95	43	33	.03	WSW..	1 S,.. 3 Cy.. 4 R.
29	28	82	28	79	46	33	.16	WSW...	1 S,.. 3 R..
30	29	25	28	98	41	34	.01	WNW..	1 S.. 4 R.
1	29	45	29	36	41	32		NW..	1 S..
2	29	45	29	45	38	30	.13	NW..	1 Snow and R. 4 Starl..
3	29	35	29	05	38	28		SE..	1 Cy.. 4 Snow.
4	29	10	29	05	38	30	.09	SE.SW.	1 Snow. 2 S..
5	29	60	29	49	39	31		NW..	1 S.. 2 R. 4 Starl...
6	29	67	29	43	35	28		NW..W..	1 S...
7	29	16	29	06	43	29	.13	SE..SW..	1 Snow.. 2 Cy..
8	28	88	28	72	48	34	.19	SW..SSW....	1 Cy.. 2 R..
9	29	33	29	27	38	24		NW..	1 r.&snow.2S..4Starl....
10	29	11	28	79	36	25		W..SE..	1 S.. 2 Snow..
11	29	28	29	06	42	33	.86	NW..SW..	1 S,. 3 Cy.. 4 R....
12	29	09	28	96	49	45	.17	SW...SW....	1 S,. 4 R..
13	29	11	29	04	47	41	.09	W..SW....	1 Cy... 2 S.. 4R.
14	28	95	28	92	48	41	.19	SW..SW....	1 S.. 2 R..
15	29	16	28	66	49	41	.03	SW...	1 Sh. and S..
16	29	29	28	53	50	39	.08	SSW....	1 Sh.
17	29	08	29	08	51	41	.38	S..SW....	1 S.. 2 R...
18	29	12	29	10	53	44	.12	SW....	1 S... 4 R..
19	29	60	29	40	45	37		W..	1 S.. 4 Moonsh....
20	29	76	29	71	40	29		NW.	1 Cy.. 2S.. 4 Moon...

The quantity of rain in November was $\frac{88}{100}$ of an inch. From the 8th to the 18th of December, the weather has been remarkably stormy, with much rain, snow, and heavy gales of wind.

The prevailing diseases during this period have been catarrhal and pulmonary complaints, which were generally severe and often tedious. Two cases of Phthisis Pulmonalis proved fatal this month: they have existed since last winter. Dyspepsia and Gastrodynia have been common. Hæmatemesis much more frequent than usual. Varicella still prevails, but being a slight disease, medical aid is seldom sought. Typhus has made its appearance, and has already been attended with some fatality. A lady, (in whose family Pulmonary Consumption has made great havock, but who had hitherto been healthy,) was about three weeks ago attacked with Typhus of severe kind; within the last few days symptoms of Phthisis, a teasing cough and spitting, quick respiration, hoarseness, and hectic flushing of the face have become apparent; the pulse about 160. She complains of no pain, and always says she is much better when inquiry is made. She has had eight children, and was ten weeks advanced in her ninth pregnancy when the fever began, but miscarried on the 12th day.

A REGISTER of the DISEASES of LONDON between November 19th and December 20th, 1814, for the London Medical Repository.

DISEASES.	DISTRICTS. 1 S. W.	2 S.	3 S. E.	4 E.	5 N. E.	6 N.	7 N.	8 W.	9 Surry sideW	10 Surry sideE.	11 Hamp Highg	No. of Cases.	Fatal.
Aneurysma Aortæ	1											1	1
Anasarca	1			6	3	4	4	1	4			23	2
Ascites			1		3	1	2	3	2	1	1	14	5
Asthma	8		4	5	31	14	38	18	7		7	132	10
Acne	2		1		5	1			1	2		12	
Apoplexia			1	4	2	1	3	2	2	1		16	9
Aphtha	2			1	4	6	2	1		3		19	
Amenorrhœa	9	4	3		7	6	4	1	4	2	2	42	
Asthenia	6	4	6	1	11	4	3	1	7	5	3	51	2
Abortio	3		1		2	1		2	3	5	3	20	
Bronchitis acuta	3		1	2		4	5		2	7		22	3
—— chronica	6	1	1	1	8			1		1		19	
Cancer					1	2						3	
Cephalæa	2			1		2			2			7	
Chlorosis	4	3	4			2	3	4	3		6	29	
Cholera	5	3	2			1		2	5			18	
Chorea	1						1					2	
Cephalalgia	14	9	8	1	8	9	7	7	9	4	4	80	
Colica	2	6		9	3		5	8	3		3	39	
Catarrhus	52	35	19	44	43	22	65	68	24	31	13	416	
Convulsio	3					5	1	1		1		11	2
Cynanche Tonsillaris	8	4	4	7	4	8	16	29	8	11	12	111	
—— maligna	1		1			1	2		1			6	
—— Trachealis					1						1	2	
—— parotidea	1		1			2	1	2	2			9	
Dysecoea atonica								1				1	
Diabetes								1				1	
Dysenteria	1	4	1		2	5	3	3	5			24	
Diarrhœa	17	8	7	12	11	18	8	17	11	2	2	113	
Dyspnœa	9	1	1	2	3	6	5	10	4	1	3	45	
Dyspepsia	12	13	12	30	7	12	28	28	11	4	11	168	
Dysuria	1		1	1	1	2		2				8	
Epistaxis		1				1		1				3	
Ecthyma			2		1		2					5	
Eczema							1		1	2		4	
Erysipelas	6	2	2	1	5	2	4	10	7	3	4	46	
Enteritis						1				2		3	
Entrodynia		3	4		7	1		1	5		4	25	
Enuresis						4	3					7	
Epilepsia	2		1	2	2	4	2	3				16	
Febris remittens	7	30	6	4	10	9	3	15	11	12	3	110	
—— intermittens				1	1	2	2	5	3			14	
—— puerpera				2						2	1	5	
—— synochus		3			2	1		2	2			10	
Fistula lachrymalis				1								1	
Gastritis						1	1	3				5	
Gastrodynia	13	3	5	7	8	2	3	2	8	5	3	59	
Hæmatemesis					3	1	1		2			7	
Hæmoptoe	3			6	2	4	1		1	4		21	1
Hæmorrhois	3	1	2	2	7	5	1	5	4	3	2	35	
Hepatitis	1		2	10	2	3	4	1	5	6		34	1
Hysteria	2	7	3	6	4	8	3	2	6	2	4	47	
Hysteritis							1					1	
Hydrocephalus	1					1		1		1		4	3
Hydrothorax				2	1	4	1	3		2		13	4
Herpes	2			3	4	5	3	3	4	1	3	28	
Hypochondriasis			1		1	1		5				8	
Icterus	1			1	2	2	3	3	3			15	1
Impetigo	1		1		4	1	4		2			13	
Ischuria					4	1	4	2		1	1	13	
Leucorrhœa	4		3			5		5	3	4		28	
Lithiasis	1					2	1	4	1			9	
Lepra							1		1			2	
Lichen						3			1		1	5	
Mania	2	1				2	2	1		2		10	1
Melancholia	1									1		2	
Menorrhagia	6	9	3	11	1	5	5	5	4	1	5	55	
Miliaria					1							1	
Morbi Infantiles*	24	6	8	6	17	17	16	42	28	74	7	245	4
—— Biliosi	26	4	20	3	6	10	11	25	31	62	5	203	1
Nephralgia			1		1			2				4	
Nephritis				3	3		2	4	1	2		15	
Obstipatio	8	2	1	5	8	5	4	2	5	2		42	
Ophthalmia	4	11	3	5	10	3	8	19	9	8	7	87	
Odontalgia			2		3	2		2	1			10	
Otalgia		1			1	1		3				6	
Paralysis	6	1		4	2	8	3		2	2	1	29	2
Phthisis Pulmonalis	2			6	7	7	8	7	2			39	7
Profusio	1					1			1			3	
Pertussis	8				2	6	4	3	4	9		36	
Peritonitis			2	6	3	2			1	1		15	
Paracusis								1				1	
Phrenitis				3		1		1		1		6	
Pneumonia	4	7	7	12	20	13	15	17	7	20	3	125	13
Pleuritis			1	1	2	2	1			1		8	1
Pleurodyne			2		1	2	1					6	
Podagra	7	4		5	5	4	2	7	4	1	1	40	
Porrigo larvalis					3							3	
—— scutulata	2	1	3		1			1	2	1		11	
Pompholyx								1				1	
Psoriasis			2			6	2	2	3		3	18	
Pemphigus								1				1	
Purpura										1		1	
Pyrosis	4		2				4	1	3			14	
Phlogosis	5	1		2	3		2		2			15	
Rachitis				2								2	
Rheumatis. acut	23	11	5	4	5	4	5	12	6	2	3	80	
—— chron.	11		3	6	21	8	20	19	14	6	5	113	
Rubeola	11	4	3	25	12	8	5	12	8	11	2	101	3
Roseola	5								2			7	
Scabies			3	5	4	6	52	12	5	1	3	91	
Scarlatina simplex	2	6		3	4	3	1	1	2	1		23	
—— anginosa	3					2	1		1	3		10	1
Splenitis			1							1		2	
Scrofula	4		4		5	3	7	2	3	3	2	33	
Scirrhus Pylori	1											1	
Strictura Recti								1				1	
Tabes Mesenterica		3		2	2	5	2	1	2	1	2	20	3
Trismus							1					1	1
Typhus	1		1		2	6	4	3	1			18	2
Variola	1	1		4	3	13	6	11	4	5		48	7
Varicella	1			5	4		2	2	2		1	17	
Vermes	10	1	4	4		11	1	2	5	6	4	48	
Vertigo	3		1	6	3	4	2	7	4		4	34	
Urticaria	1	1		2	3		3	3	1		2	16	
Total No. of Cases	408	220	194	319	407	378	461	518	362	354	159	3780	
Total of Deaths													90

* *Morbi Infantiles* is meant to comprise those Disorders principally arising from dentition or indigestion, and which may be too trivial to enter under any distinct head. *Morbi Biliosi*, such Complaints as are popularly termed *bilious*,

AN ABSTRACT from the REGISTER *of those* DISEASES *of* LONDON, *presumed to originate in, or be influenced by, the State of the* ATMOSPHERE, *with a* DIURNAL REFERENCE *to the* METEOROLOGICAL TABLE.

METEOROLOGICAL TABLE,

From the 20th of NOVEMBER, to the 19th of DECEMBER, 1814.

M.	Therm.	Barom.	Hygrom. Dry.	Hygrom. Damp.	Winds.	Atmos. Variation.	D.
◐	41 44 40	29⁶		40	E.	R.fog..C..R..R..inN	20
	39 40 35	29⁷		38	NW..	C....C...C..F	21
	30 36 33	29⁷		44	W.	C.C.Fog..	22
	31 38 39	29⁷		40	E.	Fog..C..R.	23
	39 42 41	29⁸	6	42	E.S.	Fog...C...R...r...inn	24
	46 49 50	29⁵	3	50	S.	R...C....R...R...inN	25
	47 48 44	29²	5	45	S.W.	R..R...C...	26
○	38 46 45	29⁶	3	6	W.	C.C..R...F	27
	39 40 41	29⁷	6	5	NWc..	C....C..R.R... in N	28
	45 48 44	29⁵	2	5	NW.SW.	C...C...R..C.	29
	42 44 40	29²	4	6	Wc.	C...C.C.	30
	40 41 39	29⁵	7	35	NW.	C.C..R.C..snow.inn	1
	38 40 38	29⁸		15	NW.	C..C..C..	2
	06 38 36	29⁹	7	42	Ec	Fog....Fog...Fog.R..in N	3
◑	40 48 40	29⁵	4	36	S..E..S..	R..C...F...C..F..	4
	38 42 40	29⁴	7	45	W..	C...C...R.C..F...	5
	34 40 35	30	1	26	N.	F....C..C..C...	6
	39 42 39	30	29⁸	22	SW.	C....C..R...R..	7
	47 50 52	29⁶	3	40	W..	C.R...R..R.. in N	8
	50 47 39	29²	7	42	W...N..	F.R..C..F...	9
	52 50 51	29⁸	5	27	Ec .SE...	Fog..Fog...R..R..	10
◔	51 52 52	29⁴	7	40	W...	R...R.R...	11
	55 56 54	29⁸	7	42	W...	C....R..R...	12
	54 56 48	29⁷		20	NW...	C...R.C.F....	13
	46 56 58	29⁸	6	5	W..	C..C..R.C....	14
	54 56 51	29⁷		30	SW...	C.C.F...R..in N	15
	54 56 54	29⁵		35	SW...	R.C...F...	16
	55 56 54	29⁷		45	SW...	C..F.R..C...	17
	55 56 52	29⁸		33	SW...	C...C.C...C..R.in N	18
◐	54 56 42	29⁷		50	SW...	R..C.C..C...F....	19

	Asthma.	Apoplexia.	Bronchitis.	Cholera.	Cephalalgia.	Colica.	Catarrhus.	Cynanche.	C. Trachealis.	Dysenteria.	Diarrhœa.	Dyspnœa.	Erysipelas.	Febres.	Hæmoptoe.	Morbi Biliosi.	Ophthalmia.	Paralysis.	Phthisis.	Pertussis.	Pneumonia.	Podagra.	Rheumatismus.	Rubeola.	Scarlatina.	Typhus.	Variola.	Varicella.	Vertigo.	Urticaria.
No. of Cases...	132	16	41	18	80	39	416	126	2	24	113	45	46	139	21	203	87	29	39	36	125	40	193	101	33	18	48	17	34	10
Fatal.....	10	9	3												1	1		2	7		13			3	1	2	7			

Princes Street, Cavendish Square.

Total of Cases,...2277. Total of Deaths,...59.

Quantity of Rain from the 20th of November to the 19th of December, 3 inches 15-100.

BILL OF MORTALITY *from November* 15, *to December* 20, 1814.

CHRISTENED.

	Nov. 15-22.	Nov. 29.	Dec. 6.	Dec. 13.	Dec. 20.
Males.....	207	246	156	392	154
Females....	234	219	174	345	116
	441	465	330	737	250

Total *(five weeks)*..... 2223.

BURIED.

	Nov. 15-22.	Nov. 29.	Dec. 6.	Dec. 13.	Dec. 20.
Males.....	234	283	211	457	173
Females.....	224	285	194	458	145
	458	568	405	915	318

Total *(five weeks)*..... 2664.

OF WHOM HAVE DIED,

Under 2 yrs.	124	117	117	234	88
Betw. 2 & 5...	65	77	56	92	33
5 & 10...	21	28	19	48	7
10 & 20...	14	22	14	33	5
20 & 30...	27	44	26	73	23
30 & 40...	43	52	36	84	26
40 & 50...	52	51	39	101	33
Betw. 50 & 60...	56	34	40	93	35
60 & 70...	54	33	28	70	31
70 & 80...	28	32	17	48	19
80 & 90...	11	15	11	30	18
90 & 100...	3	3	2	9	2
Small Pox	20	30	18	51	15

Total...*(five weeks)*... 154.

IN the earlier part of this interval, the cold was considerable, and on the 23d of November, ice, an inch thick, was brought into London for the confectioners. The observation that the duration of frost, without an intermission of thaw, is seldom more than three days before Christmas, has been verified this year. The frost, which began on the 21st, with an appearance of continuance, terminated on the evening of the 24th. After heavy rain in the night of the 28th, with quick evaporation, sudden rise of the mercury in the barometer, and the hygrometer marking a small degree of humidity, heavy rain came on in the afternoon, with a sudden depression of the mercurial column. The latter portion of this interval has been warm and humid to an extraordinary degree, and the temperature especially has amounted to a heat almost oppressive.

Whatever may be the cause, the weekly bills of mortality rarely evidenced a more striking difference in the deaths than those now published. From December the 6th to the 13th, the mortality doubled that of the preceding, and was nearly two-thirds more than in the succeeding week. It is not a little extraordinary, that those at that period of life when the mortality is generally the least, viz. between 20 and 30 years of age, suffered equally with those the most advanced in years: for among these two classes the deaths were most numerous.

Humanity is shocked at the fact, and foreigners will scarcely believe, that, in the metropolis of that country where Vaccination was discovered, there should have been 114 deaths from Small Pox within one month! The virulence of the disease may be

judged of from our Register, which shews that the deaths, under proper medical attendance, are nearly one in six. According to the Bills, though not the Register, Measles and Hooping Cough have been exceedingly destructive.

Catarrh, which insidiously plants the seeds that germinate with the progress of winter, and ripen into various mortal diseases, is more common; and some of the inflammatory affections, such as Cynanche, Hepatitis, &c. have increased. There are a remarkable number of cases of Lithiasis. Podagra has doubled; Variola and Morbi Infantiles are much augmented.

One of the fatal cases of Typhus commenced with symptoms most resembling those of Synochus; and, although it proved fatal, could certainly not be regarded as more than Typhus mitior. Considerable debility existed from the first, and no particular pain in the head after the third day, when a blister having been applied to the nape of the neck, the patient appeared to be almost convalescent. No redness of the eyes ever appeared; but from the frequent low muttering delirium and *subsultus tendinum*, considerable affection of the brain most probably existed.

In another case of Typhus, evidently the offspring of contagion, the disease subsided about the seventh day: after which carbuncles appeared in succession to the number of seven: one of them was nearly of the size of a saucer.

The case of Mania, reported dead, was an elderly man, who had suffered under the disease many years, without his general health being materially impaired. The disease, as is not uncommon, terminated in apoplexy. The other case was one which was formerly reported; but had recovered. The subject of it was a young girl of fourteen years of age, whose mother and grandmother had suffered under temporary insanity: but in the former of whom the disease did not appear till some years after the birth of this patient. We are particularly led to make this remark, because a late writer on hereditary diseases has asserted, that marriage with the healthy branches of families, in which insanity has appeared, should not be interdicted. In the present instance the mother of this patient was in the best health before, and at the time of her marriage; and continued so until after the birth of her third child; yet the eldest of the family appears to have inherited the disease.

Two of the cases of Asthma made their appearance during the fogs which prevailed for a few days at the commencement of the month. Both the dyspnœa and cough were very severe, and the pulse hard, but slow and oppressed. In the first, blood was taken to the amount of ℥xvj. with considerable advantage; and in both the most decisive benefit followed the exhibition of small doses of calomel and squills at bed-time, with a mild purgative in the morning, continued until the evacuations assumed a healthy aspect. The cough, which was left to itself, abated as the secretions of the *primæ viæ* were improved. Two of the fatal cases were in persons under 30 years of age; but having deformed chests. Another died in a paroxysm of spasmodic asthma; and another, after a sudden and unusual expectoration of purulent fluid, which she had brought off in great quantities for the last two years.

A case of obstruction of the maxillary duct occurred, which occasioned a large tumour under the tongue, of the size of a pigeon's egg. It was punctured, and a gelatinous matter was discharged resembling the white of an egg. Two of the cases of Urticaria were the effect of eating the skin of smoked (red) herrings.

Examinations post mortem. The parenchyma of the lungs of this last asthmatic patient was found to be very vascular, and so was the membrane lining the bronchiæ. Upon inspecting the brains of two who died of Apoplexy; in one, aged 71, who was attacked in a fit of coughing, and expired about ten hours after, extravasation had taken place in the cerebellum, and seven ounces of blood were found on the left hemisphere. The primary extravasation appeared in the *pons varolii*. In the other, aged 83, the cerebral arteries were found much ossified. A woman, aged 29, who died of Hydrothorax, had had, about twelve months before, an attack of Carditis; and the cause of her death seemed to have arisen from the inflammation of the vericardium. The heart was very large; the pericardium three-fourths of an inch thick, adhering to the heart; and upon that organ were patches

here and there of a nature intermediate between bone and cartilage. A case of Pneumonia was discovered to have terminated in Empyema. An infant of two weeks old was found to have died of Icterus.

Observations on Diseases for No. 12 (omitted).

Many cases during the month of the remitting fever of infants occurred, in general clearly connected with a morbid state of the bowels, but sometimes combined with severe affections of the chest, or Cephalalgia catarrhalis. Evacuation of the morbific matter from the alimentary canal, when that only was indicated, or local bleedings from the thorax or head, most commonly relieved the symptoms; though many died from the severity of the pneumonic attacks. Scarlatina anginosa is reported as being very prevalent in the environs of the metropolis, beyond the returns of this register; yet it has not been fatal.

Several cases of Cynache tonsillaris have had, at the commencement, more or less the appearance of the malignant species of the disease; except in the state of the pulse, which indicated the necessity of the most active antiphlogistic measures.

The subject of Scorbutus was a man about fifty years of age, to the symptoms of which he has been a long time liable. The present, like the former returns of the disease, he imputes to living long on board ship, on fish and salted meats. He has been usually restored, by an opposite diet, the cinchona, and acescent remedies.

The case of Amaurosis was of one eye only; and took place in a gentleman two days before his death. He had for many years suffered from dyspnœa, apparently arising from the difficulty of transmitting the blood from one lung to the other. He had, every winter, severe attacks of asthma, and in 1813-14 one more severe than before, accompanied with slight symptoms of anasarca. When convalescent, he discovered that the sight of the right eye was gone, though he was sensible of the difference of light and shade. No disease was perceptible. In his last illness, after the usual train of symptoms of his former complaint, general anasarca supervened; and, at length, blindness of the remaining eye, though all his other faculties were perfect.

The fatal case of Diarrhœa was in a woman seventy years of age. In one from Anasarca, erysipelas succeeded scarification, and terminated in gangrene.

Examinations post mortem. In one case of Dysenteria the small intestines were ulcerated; in the other the large intestines only were the seat of ulceration, accompanied with gangrenous patches of the inner coat. In the case of Hæmoptoe, there were tubercles of the lungs. There was ossification of the aorta and the valves, in two old people who died of Hydrothorax. In one person who died of Paralysis, there was a scrofulous tumour found in the substance of the upper part of the right hemisphere.

Monthly Prices of SUBSTANCES *employed in* PHARMACY.

		S.	D.
Acaciæ Gummi elect.	lb.	3	6
Acidum Citricum		34	0
—— Benzoicum	unc.	6	6
—— Sulphuricum	P. lb.	0	8
—— Muriaticum		2	0
—— Nitricum		4	0
—— Aceticum	cong.	4	6
Alcohol	M. lb.	4	6
Æther sulphuricus		10	6
—— rectificatus		12	0
Ærugo	lb.	8	0
Aloes spicatæ extractum		6	0
— vulgaris extractum		5	6
Althææ Radix		1	3
Alumen		0	5
Ammoniæ Murias		2	6
—— Carbonas		4	0
Amygdala dulcis		5	6
Ammoniacum (Gutt.)		9	6
—— (Commun.)		3	6
Anthemidis Flores		2	3
Antimonii oxydum			
—— sulphuretum		1	0
Antimonium Tartarizatum		6	6
Arsenici Oxydum		1	0
Assafœtidæ Gummi-resina	lb.	6	6
Aurantii Cortex		4	6
Argenti Nitras	unc.	6	9
Balsamum Peruvianum	lb.	30	0
—— Tolutanum		24	0
Benzoinum elect.		10	0
Calamina præparata		0	6
Calumbæ Radix		3	6
Cambogia		10	6
Camphora		9	6
Canellæ Cortex		6	6
Cardamomi Semina opt.	lb.	13	0
Cascarillæ Cortex		3	6
Castoreum	unc.	5	0
Catechu Extractum	lb.	2	4
Cetaceum		3	0
Cera alba		4	0
—— flava		3	6
Cinchonæ cordifoliæ Cortex (yellow)		8	6
—— lancifoliæ Cortex (quilled)		10	6
—— oblongifoliæ Cortex (red)		16	0
Cinnamomi Cortex		20	0
Coccus (Cochinella)	unc.	3	6
Colocynthidis Pulpa	lb.	7	6
Copaiba		6	6

		S.	D.
Colchici Radix	- - - -	3	6
Croci stigmata	- - - unc.	4	6
Cupri sulphas	- - lb.	1	0
Cuprum ammoniatum	- - -	14	0
Cuspariæ Cortex	- - - -	4	0
Confectio aromatica	- - -	10	0
—— Aurantii	- -	3	6
—— Opii	- - -	6	0
—— Rosæ Caninæ	- -	2	3
—— Rosæ Gallicæ	- -	2	0
—— Sennæ	- - -	1	8
Emplastrum Lyttæ	- - -	7	6
—— Hydrargyri	- -	4	0
Extractum Cinchonæ	- - unc.	3	0
—— Cinchonæ resinos.	- -	5	0
—— Colocynthidis	- -	3	6
—— Colocynthidis comp.	-	1	6
—— Conii	- - -	0	8
—— Gentianæ	- - -	0	6
—— Glycyrrhizæ	- lb.	4	6
—— Hæmatoxyli	- unc.	0	8
—— Humuli	-	0	6
Extractum Hyosciami	unc.	1	0
—— Jalapæ	- 2*s.* 0*d.* Res.	3	6
—— Opii	- - -	3	6
—— Papaveris	- - -	1	0
—— Rhæi	- - -	2	6
—— Sarsaparillæ	- -	1	0
—— Taraxaci	- - -	0	8
Ferri carbonas	- - - lb.	1	0
— sulphas	- - -	1	3
Ferrum ammoniatum	- - -	5	0
—— tartarizatum	- -	4	6
Galbani Gummi-resina.	- -	10	0
Gentianæ Radix	- - - -	1	3
Guaiacum	- - - - -	9	0
Hydrargyrus purificatus	- -	6	6
Hydrargyri Oxymurias	- unc.	0	9
—— Submurias	- - -	0	9
—— Nitrico-Oxydum	- -	0	9
—— Oxydum Cinereum	-	1	4
—— Oxydum rubrum	- -	6	0
Hydrargyrus præcipitatus albus	- -	0	9
Hydrargyri Sulphuretum rubrum	-	0	8
Hellebori nigri Radix	- lb.	2	6
Ipecacuanhæ Radix	- - -	22	0
—— Pulvis	- - -	24	0
Jalapæ Radix	- - - - -	6	6
—— Pulvis	- - - - -	7	6
Kino	- - - - - -	12	0
Liquor Plumbi Acetatis	- M. lb.	1	8
— Ammoniæ	- - - -	2	6
Linimentum Camphoræ comp.	-	6	0
Lichen Islandicus	- lb.	1	4
Lyttæ	- - - - - -	16	0
Magnesia	- - - - -	9	0
Magnesiæ Carbonas	- -	3	6
—— Sulphas, opt.	- - -	1	6
Manna optima	- - -	7	0
— communis	- -	5	0
Moschus pod, 40*s.*	in gr. unc.	50	0
Mastiche	- - - - lb.	6	6
Myristicæ Nuclei	- - -	24	0
Myrrha elect.	- - -	8	6
Olibanum	- - - - - -	3	0
Opoponax	- -	26	0
Opium (Turkey)	- - -	32	0
Opium (East India)	- - -	31	0
Oleum Amygdalæ	- - - lb.	4	0
— Anisi	- - - unc.	2	9
— Anthemidis	- - -	6	0
— Cassiæ	- - - -	9	0
— Caryophilli	- - -	5	6
— Cajuputi	- - - -	6	6
— Carui	- - - - - -	1	9
— Juniperi Ang.	- - -	4	0
— Lavendulæ	- - -	5	0
— Lini	- - - cong.	6	0
— Menthæ piperitæ	- unc.	4	6
Oleum Menthæ viridis Ang.	- unc.	4	6
— Olivæ	- - cong.	23	0
— Olivæ secunduin	- 12*s.* to	16	0
— Pimentæ	- - unc.	8	0
— Ricini optim.	- (per bottle)	10	6
— Rosmarini	- - unc.	0	9
— Succini 2*s.* 4*d.* ——	rect.	4	0
— Sulphuratum	- P. lb.	1	6
— Terebinthinæ	- - -	1	9
— —— rectificatum	- -	2	3
Papaveris Capsulæ	- (per 100).	3	0
Plumbi Carbonas	- - lb.	0	8
— Superacetas	- - -	2	6
— Oxydum semi-vitreum	-	0	8
Potassa Fusa	- - - unc.	0	9
— cum Calce	- - -	0	6
Potassæ Nitras	- - lb.	1	5
— Acetas	- - - -	8	6
— Carbonas	- - -	1	9
— Supercarbonas	-	4	6
— Sulphas	-	1	4
— Sulphuretum	-	2	6
— Supersulphas	- -	0	6
— Tartras	- - -	3	6
— Supertartras	- - -	1	6
Pilula Hydrargyri	- - unc.	0	9
Pulvis Antimonialis	- -	0	8
Resina Flava	- - lb.	0	5
Rhæi Radix (Russia)	- -	40	0
—— (East India)	- -	16	0
Rosæ petal.	- - - -	9	0
Sapo (Spanish)	- - -	2	9
Sarsaparillæ Radix	- -	7	0
Scammoneæ Gummi-Resina	- unc.	2	6
Scillæ Radix siccat	- - lb.	5	6
Senegæ Radix	- - -	4	0
Sennæ Folia	- - - -	7	0
Serpentariæ Radix	- -	30	0
Simaroubæ Cortex	- -	4	6
Sodæ Boras	- -	4	0
— Sulphas	- - -	0	10
— Carbonas	- - -	7	0
— Subcarbonas	- -	1	8
— —— exsiccata	- -	5	0
Soda tartarizata	- - -	3	0
Spongia usta	- - - -	28	0
Spiritus Ammoniæ	- M. lb.	4	0
—— aromaticus	-	4	0
—— —— fœtidus	- -	4	0
—— —— succinatus	-	5	0
— Cinnamomi	- - -	3	0
— Lavendulæ	- - -	4	6
— Myristicæ	- - -	3	6
— Pimentæ	- - -	3	6
— Rosmarini	- - -	4	0
— Ætheris Aromaticus	- -	6	6
— —— Compositus	- -	6	6
— —— Nitrici	- -	4	0
— —— Sulphurici	-	6	6
— Vini rectificatus	- cong.	28	0
Syrupus Papaveris	- - lb.	2	0
Sulphur	- - - -	0	8
— Sublimatum	- -	0	10
— Lotum	- - -	1	0
— Præcipitatum	- -	1	2
Tamarindus opt.	- - -	2	6
Terebinthina Vulgaris	- - -	0	10
Terebinthina Canadensis	- -	7	6
Terebinthina Chia	- - - -	9	0
Tragacantha Gummi	- - -	8	0
Valerianæ Radix	- - - -	1	6
Veratri Radix	- - - -	1	6
Unguentum Hydrargyri-fortius	-	5	6
—— —— Nitratis	-	2	8
—— —— Nitrico-oxy.	-	3	0
Uvæ Ursi Folia	- - -	2	6
Zinci Oxydum	- - -	6	0
— Sulphas purif.	- - -	2	6
Zingiberis Radix opt.	- - -	3	6

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INDEX INDICATORIUS.

The Half-Yearly Report of the Progress of Medical Science *must occasion the postponing of many valuable communications; but we hope that possesses sufficient interest to atone for the deferring, or abridging of other matter.*

The favours of Chirurgicus, Mr. Wm. Williams, *and of* Mr. Toone, *with those of our* Chippenham *and* Northampton *Friends, are received: The requests of the two latter Gentlemen shall be complied with, as far as lies in our power.*

The queries, by A Pupil, *respecting the meaning of the figures and letters in the Richmond Meteorological Table, are explained by the ingenious author of that table in* Repository, *vol. i. p.* 93.

Our various Correspondents, with whom we are in arrears, will perceive, that, contrary to our ordinary rules and declarations, we have given precedency to Mr. Bellingham's *case of* Hydrophobia. *The note we have thought right to add to it, will explain the cause of that preference.*

THE

LONDON MEDICAL

REPOSITORY.

No. 14. FEBRUARY 1, 1815. Vol. III.

PART I.

ORIGINAL COMMUNICATIONS.

I.

A Case of Ruptured Uterus. By Henry Gore Clough, M. D.; Lecturer on Midwifery in London.

Two cases of Ruptured Uterus have happened in the metropolis in a few weeks, and a history of one of these having been already given in the Repository, (vol. ii. p. 361,) I am induced to think an account of the other will neither be useless nor unacceptable.

Elizabeth Danielli, the subject of this unfortunate case, married at the age of eighteen, and became pregnant of her first child about the latter end of the year 1812. At the commencement of 1813, she was afflicted with severe diarrhœa, which, baffling every means used for its suppression, continued to the time of her accouchement. On the 19th of June her labour commenced; but being unwilling to give trouble, she did not apply for assistance until the morning of the 21st, when she appeared much exhausted, and the pains had become feeble and inefficient. By an examination *per vaginam*, I then ascertained the external orifice and os uteri to be in a dilatable state, and that the membranes had been some time ruptured. In about an hour, I discovered the head of the child resting on the upper aperture of the pelvis. The abdomen, at this time, was very much distended, and as the *liquor amnii* had been discharged, I concluded that there was either a very large child, or twins. The pelvis was preternaturally small, but not distorted. The exact presentation of the cranium I cannot at

present determine, not being able to recover the notes made at the time.

Having maturely considered all the circumstances, I judged it expedient to perform *cephalatomia* immediately; this being effected, she was left to obtain some repose.

On the 22d, about two in the afternoon, with the assistance of Mr. Andrews, of Crawford Street, then my pupil, I effected, with much difficulty, the delivery of a large male child. The diarrhœa, before mentioned, continued for six weeks after the delivery; but she recovered much better, upon the whole, than could have been expected. As elucidative of the second labour of *Elizabeth Danielli*, in which she died by rupture of the uterus, I have thought right to premise this short account of the first.

The danger from which the patient so narrowly escaped in the first labour, occasioned it to be urged to her husband and her friends, that in the event of her becoming again pregnant, it would be reasonably expedient to induce premature labour.

About the beginning of February 1814, she became again pregnant; but being desirous to have, as she had been taught to believe she might, a living child at the seventh month, and her husband not consenting to the inducing labour before that time had elapsed, the operation was deferred until I was apprehensive the advantages to be derived from it were not longer, in her case decidedly, to be expected.

Although I had been successful in the former labour, and, under great impediments, had delivered her of a very large child, I felt convinced that if she proceeded on to the end of nine months, the case would certainly be one of extreme hazard, and of, probably, fatal termination.

Under this conviction, it was determined now to bring on labour, notwithstanding the possibility of that step having been too long deferred.

On the 25th of September, about four in the afternoon, I ruptured the membranes, and the liquor amnii passed off by degrees. About forty-eight hours after the membranes had been ruptured, pains came on, and the os uteri began to dilate. I was then, (Tuesday the 27th,) at four in the afternoon, requested to attend. I found the os uteri sufficiently dilated to admit two fingers; the child being very high up in the superior aperture of the pelvis, the presenting parts could not be determined. As the os uteri became further dilated, the parts that presented were ascertained to be both arms, and the left lower extremity on the right side, and the head on the left, strongly wedged in the brim of the pelvis by powerful uterine action; which action continued without intermission near four hours. During this time I had made frequent attempts to return the arms, and

extract the child by the presenting foot; and had so far succeeded as to return one arm.

At nine in the evening, I judged it expedient to consult with my friend, Mr. Royston: Mr. Atkins, my house pupil, had been with me during the whole of the labour.

After a careful examination of the case, Mr. Royston was of opinion that it was impossible to return the remaining arm, or to push up the head enough to enable me to extract by the presenting lower extremity. The narrowness of the pelvis precluded also the possibility of passing the hand into the uterus, with a view of bringing down the lower extremity.

Under these circumstances we concluded that an attempt might, however, be made to extract by the presenting lower extremity, a piece of tape being passed round it, pushing up the head and presenting arm at the same time. But this failing, the dernier resource would be, to remove the extremities, open the head, and deliver with the crotchet.

Every effort by the first method failing, about twelve o'clock at night the extremities were removed, and the head opened. About four in the morning, I had succeeded so far as to get away several portions of the parietal and frontal bones; and was sanguine enough to hope, that, by a repetition of exertions, I might succeed in bringing the head, as in her first labour, through the superior aperture of the pelvis. After many unsuccessful attempts, I determined, there being no uterine action, to suspend all further endeavours for two hours.

At seven in the morning, on resuming the means for extracting the fœtus, no alteration in its position was discovered, and the head remained precisely in the place in which it was in the early part of the labour.

At nine in the morning the patient had profuse diarrhœa, accompanied with extreme debility, cold perspiration, dilatation of the pupil, hard rapid pulse, and cadaverous countenance: these appearances were quickly followed by a convulsion, in which she expired.

At my particular request, Mr. Brookes opened the body about eight or ten hours after death; and to his attention I am indebted for the subsequent history of the appearances.

EXAMINATIO CADAVERIS.

Brain. — On raising the *calvarium* and detaching the *dura-mater*, about an ounce and a half of pellucid serous fluid was found between the *pia-mater* and *tunica arachnoides*, considerably separating the two membranes. This morbid secretion might be considered as the consequence of great determination of blood to the brain, which was also evident from the turgid state of the vessels of that organ. — The *plexus choroides* and

velum interpositum were remarkably florid: no fluid was found in the cavities, except a few drops of blood in the inferior *cornu* of the left lateral ventricle.

Abdomen. — The integuments and abdominal muscles being removed, a laceration of the uterus just above the cervix toward the left side anteriorly was discovered; through which nearly the whole of the fœtus enveloped in the membranes and the placenta had escaped into the cavity of the abdomen, in which was found about twelve ounces of blood. The fœtus was lying transversely, with its back upwards. The peritoneal covering of the intestines and stomach was in a state of high inflammation. During the examination of the abdominal cavity, the uterus was observed to contract very considerably, and the contracting muscular fibres became distinctly marked on its surface.

OBSERVATIONS.

From the preceding history it is proved that the uterus is sometimes ruptured anteriorly; and the probability is, that, in this instance, the uterine action which lacerated that organ would, had the pelvis been of sufficient dimensions, have expelled the fœtus. The dissection also demonstrated, that the excitement of labour had too long been delayed; but it does not prove, however, that premature parturition is not sometimes an expedient that may be highly proper, for the nearly certain preservation of the mother, and the probable saving of her offspring.

The first account of this operation was given by Dr. Kelly and Dr. M'Cauly, who relate their success three times on one patient, and who had twice a living child. Dr. Denman mentions twelve instances of premature delivery by himself, or under his advice, unaccompanied with any unfavourable circumstance. In one patient in my own practice, where cephalatomia had been resorted to in a former labour, premature delivery was brought on, and a living child was born. But as the advantages to be expected from this operation depend on the relative proportions of the pelvis and the fœtus, it is essential, when deciding on its propriety, to determine these facts with all possible precision; for should the gestation be allowed to proceed until the child has arrived at too large a size, the advantage of saving its life will be lost, though that of the mother may with somewhat more certainty even then be preserved, than if gestation had gone on to its full term.

Although the case of *Elizabeth Danielli* was prepared for the press previous to the publication of Dr. Blegborough's case of Mrs. Pope, its printing was delayed to afford the op-

portunity of making some observations on two essential points of practice.

The first of these respects the propriety of performing cephalatomia in preference to the cæsarean section, in all cases of distortion where the pelvis measures only one inch and three quarters.

That the cæsarean section may, under some circumstances, be preferable to cephalatomia, I am disposed to admit; because, as in the case of Elizabeth Danielli, it may be impossible to extract the fœtus after the head is opened. It is then that both mother and child must perish. If in the case of this woman the cæsarean section had been early performed, the child would have been saved, for it was known to be alive; and the mother might, though it is not probable, have survived. The great difficulty of ascertaining which of these operations should be adopted in preference to the other in any given case, is sufficiently apparent: yet the sweeping conclusion that the cæsarean section should be always rejected, I am not willing to allow, for by that operation the life of the child will often be saved, and if it be performed early, possibly sometimes that of the mother.

The second proposition, which supposes the laceration of the uterus to be known to have taken place at its cervix, advises the incision in the cæsarean section to be made in that part in preference to any other.

The great object to be attended to in making the incision through the teguments in the cæsarean operation, seems very properly to have been the avoidance of the epigastric and hypogastric arteries, and their anastomosing branches, so much enlarged during utero-gestation. The proposition to make the incision near the *cervix uteri*, even should the laceration be ascertained to be in that part, so much hazards the wounding of the trunks or enlarged branches of these arteries, that I am disposed to think it altogether inadmissible.

68, Berners Street, November, 1814.

II.

Observations on Blood-letting in Hydrophobia. By Henry Edmondston, A. M. Surgeon, Newcastle-on-Tyne.

The following observations on Hydrophobia were mostly written several months ago, and I should not now request a place for them in the Repository, had I not noticed in the number for September last some general remarks on that fatal

and interesting disease, by Mr. Kerrison, which appear to be rather too premature and unqualified.

Before proceeding any farther, however, I think it necessary to acknowledge, that various reasons, which I need not here enumerate, have conspired to produce on me an impression, or, what some would perhaps call a prepossession, in favour of blood-letting as a remedy in hydrophobia. I cannot, therefore, be said to enter upon the discussion with a mind wholly uninfluenced by prejudice. My remarks will, consequently, be received with all the reserve that such a qualification may require.

Mr. Kerrison, after detailing a fatal case of hydrophobia which occurred in his practice, observes, "the successful treatment of some cases of supposed hydrophobia in India, by very copious bleeding, has induced many to adopt that practice. But among the many instances of its inefficacy in this country, the case which occurred in the Middlesex Hospital, and which I saw, is a confirmation that depletion is as futile as any means of cure ever attempted*."

Now it does appear to me, that to characterize the cases which occurred in India as "cases of *supposed hydrophobia*," hardly evinces a sufficient degree of liberality towards his professional brethren, and at all events does not breathe so much of the pure spirit of medical philosophy, as from the specimens of Mr. K.'s writings which I have seen, I should have been inclined to give him credit for. I am aware that medical facts are, more than any other, liable to error and perversion. It is but too well understood, that much of what is regarded as truth in medicine, has no pretensions to that title; and that it would be fortunate for the science, if science it can be called, were the augean stable of what are termed medical principles made to undergo some kind of purification. But still a certain latitude of statement on the one hand, and credence on the other, must be extended to all well-authenticated medical histories, if we do not desire that the very little which we do know be made infinitely less.

If there be in medicine any thing in the shape of a fixed principle, I presume this to be one—that the *bona fide* accounts of diseases and remedies, by men qualified by education and extensive experience, and possessed of sagacity and sound judgment to direct them in forming their opinions, must be credited until they have been disproved by evidence still more respectable. Now let us inquire into the credibility of the medical intelligence on the subject of hydrophobia received from India.

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* Vide *Repository*, vol. ii. p. 201.

Without investigating the cases of Mr. Tymon, which are of a nature sufficiently satisfactory, let us proceed to the examination of Dr. Shoolbred's case;—and here, as far as medical testimony is to be the least depended on, neither doubt nor difficulty of any kind exists. The cure was effected by blood-letting ALONE. Here, too, the authenticity of the disease is complete. The physician who treated it, had witnessed no less than eighteen cases of hydrophobia, a number greater than perhaps had ever fallen under the observation of any other practitioner in any age or country. If experience, therefore, gives a man a superior claim to attention, Dr. Shoolbred is entitled to our most unqualified notice and respect. But besides experience, it is clear, from Dr. S.'s manner of writing, that he is possessed of talents of no ordinary stamp. He had the advantage, too, of the practice which had been followed in Mr. Tymon's cases, and was prepared to give it a fair trial. He was not deterred by the state of the pulse, which was extremely variable; "sometimes," as he says, "moderately slow and regular for a few pulsations, and, immediately after, so quick as not to be counted; but conveying, upon the whole, an idea of a greatly impeded and oppressed circulation*." The result of the trial was the most auspicious that could have been hoped for or imagined. One circumstance to be kept in mind was the florid appearance of the blood, the colour of which more resembled the arterial than the venous blood;—a circumstance not to be calculated on *a priori*, and which might have made a less determined practitioner than Dr. Shoolbred to hesitate. But he was not to be driven from his purpose. He boldly persisted, and by the time half the quantity of blood had flowed, the most marked reduction of the diseased action was observable; and the patient acknowledged himself to be better. By the time the whole of the blood (about two pints) had been drawn, the patient took the cup, which had the moment before convulsed him with horror, and drank several ounces of fluid, and in a short time four ounces more. During the bleeding, the unexampled occurrence took place of the patient wishing to be fanned; than which, a more satisfactory proof could not have been afforded of the morbid association or catenation of symptoms having been broken, if not entirely destroyed. For the sensibility to air, as Dr. Shoolbred and others justly remark, is not less characteristic of hydrophobia than the horror at liquids.

The next favourable occurrence was the disposition to sleep (which scarcely ever takes place in hydrophobia), a sure indica-

* Vide *Edinburgh Medical and Surgical Journal*, vol. ix.

tion that in this instance the disease had been interrupted or reduced. The symptoms appearing to return, the bleeding was repeated, to fainting, and the same good effects followed.—Indeed the disease seemed from that moment to have been completely overcome, and the cure must, agreeably to the opinion of Dr. Shoolbred, be fairly ascribed to the bleeding alone; and consequently the inference is also fair, that the success on Mr. Tymon's case proceeded from the same cause, and not from the other means employed. The observations which Dr. Shoolbred goes on to make on the disease in general, and on this case in particular, are so judicious, candid, and conclusive, and the whole circumstances seem to be so faithfully and perspicuously related, as, in my humble judgment, to carry conviction to any mind not imbued with a more than ordinary portion of scepticism.

But even granting that these cases, by Dr. Berry, Dr. Shoolbred, and Mr. Tymon, solemnly authenticated as they are by the Indian Medical Board, are all erroneous, or fabricated, and that the medical gentlemen who treated them knew nothing at all about the matter (for to this *liberal* and *comfortable* conclusion we must come, if we refuse our assent to their statements), still I am disposed to maintain, and I trust I shall be able to shew, that, from the failure of blood-letting in this country, it does not necessarily follow that this powerful agent is "as futile as any means of cure ever attempted." It may, or it may not, ultimately prove so; but as far as matters have yet gone, no evidence has been adduced of such a decisive nature, as should authorise its entire rejection as a remedy in the formidable disease of which I am now speaking. With the exception of the case in the Middlesex Hospital, the history of which I have never perused, but the result of which I take on the faith of Mr. Kerrison, it may, I think, be fairly enough asserted, that blood-letting has never (unless in Mr. Wynne's *successful* case, which I regret not having been able to see, and perhaps in Dr. Nugent's) been in any one instance carried to the proper extent in this country. And that, either with respect to the quantity abstracted, or the period of the disease when the abstraction took place, difficulties or defects have arisen, sufficient to prevent the propriety or impropriety of the practice from being unequivocally and unalterably determined. Whether or no this be actually the case, is not material. The obscurity in which the nature of the disease is involved, leaves us at liberty to assume it as an argument; and therefore, without at present going into the pathological part of the subject, I shall content myself with stating a few general considerations which appear to have reference to this point, and which will probably bear me out in what I would consider the proof of the position which has just been advanced.

The extent to which blood-letting has been pushed in hydrophobia, bears, in regard to the quantity taken, no very great proportion to that to which it has been employed in other diseases in which its agency is less doubtful. In gastritis, enteritis, pneumonia, for example, the quantity taken in extreme cases has been, on an average, twice or thrice the amount of what has ever been abstracted in hydrophobia. I here, of course, again except the case in the Middlesex Hospital mentioned by Mr. Kerrison, because I am ignorant of its details. But granting it all its force, it goes for nothing in the general reasoning—"one swallow does not make the spring." And though it should appear that blood-letting was in that case used to the full amount, and under the most favourable circumstances, it will avail nothing, because the same thing has happened over and over again with diseases, the pathology of which is infinitely better understood, and with remedies of which the efficacy is universally experienced and acknowledged. Besides, as a set-off against this case in the Middlesex Hospital, there is the case of Mr. Wynne, successfully treated by blood-letting—and with all proper respect for Mr. K., I see no reason whatever to doubt the author of the one case, more than of the other. The point for discussion, therefore, remains precisely where it was; and I go on to allege, that the detraction of a comparatively small quantity of blood, at perhaps an unseasonable period, not having been productive of any beneficial effects, is far from amounting to any thing like a proof that the loss of a larger proportion, earlier in the disease, would have been equally inefficacious. This is a maxim so self-evident and familiar, as hardly to require any confirmation. But for the purpose of adding weight to it, and as his reasoning is illustrative of a general principle in medicine, I shall here avail myself of the authority of Dr. Gregory, on a point nearly analogous to the one for which I am now contending. It will here be distinctly understood, and I desire it may be kept constantly in mind, that no expression of mine shall, by any violence of interpretation, be tortured into disapprobation of, or even into the most distant allusion to the treatment of the case so ably detailed by Mr. Kerrison. I solemnly disclaim any such intention, and unreservedly believe that the treatment in that case was the most judicious that could be devised in the circumstances under which the symptoms presented themselves. My observations have to do, not with any particular case, but with the subject in general.

To return. Dr. Gregory, in his second memorial to the Managers of the Royal Infirmary of Edinburgh, says, "In the summer of 1797, a young man came under my care in the clinical ward, who had been suffering under pleurisy for several

days. The symptoms were so uncommonly violent, that there could be no doubt about the nature of the disease, the urgent danger of it, and the only remedy, namely, large bleeding, that could give the patient a chance for his life. The remedy certainly was not spared; my patient underwent three large bleedings within twenty-four hours, but without the least benefit; indeed he evidently grew worse, and after the third bleeding, my clerk came to tell me that he seemed to be dying. This was no surprise to me; I went immediately to the hospital, and finding his strength still entire, though the symptoms of his disease were dreadfully urgent, I instantly ordered another bleeding for him, and staid to see it performed, and to observe the effect of it. It was the largest I ever witnessed, and much larger than any bleeding that I ever prescribed. I expected, and wished to have made him faint by that bleeding, for such fainting, I am confident, often does good. He bore the loss of thirty-two ounces (a full English quart) of blood without fainting; and I durst go no further. Next day I found him worse than ever, but still, as I thought, able to bear another bleeding, which I conceived might give him some chance, though but a very small one, for his life. It was tried without delay. To ensure, as I thought, his fainting, I made him sit erect when he was bled; and in that posture he bore the loss of more than twenty ounces of blood, making in all ninety-seven ounces that were taken from him in three successive days, but within forty-eight hours. At that time he was seized with hic-cough, and I could observe some spasms in his face, so that it might be said, and in fact it was said without any exaggeration, that I had bled him into convulsions. One or two of my pupils who were very attentive to all that passed, took fright, and ran out of the room, believing all was over, and that the man was instanly to die in my hands; and I confess I had my own share of uneasiness for some minutes. On laying the man down on his bed, the spasms went off as soon and as easily as a fainting fit commonly does; and from that moment the patient was in a manner cured; the violent symptoms of his disease instantly ceased, and without the help of any other remedy, he recovered as well as any other patient I ever saw in that disease, and much faster than patients commonly do. In this interesting case, if I had stopped short after the third bleeding, and allowed the man to die, which, to the best of my judgment, he must have done in two days, or perhaps in one, I should have had the credit of doing all that could be done to save him. If I had stopped short after the fourth large bleeding, and allowed him to die, which I am confident would have been his fate, it would have been a noble subject of dispute, whether his disease or my excessive bleedings, (seventy-five ounces in thirty hours,) had

killed him. But if he had died after the fifth bleeding, whether instantly or not, there could have been no dispute at all, that I had killed him by such horrible bleeding. Dr. Radcliffe, the greatest physician in London about a hundred years ago, when ill of the same disease, (pleurisy,) at the age of sixty, was bled to the amount of a hundred ounces in one day; by which means he was cured, though he had been so ill, that for some time he was absolutely despaired of. Radcliffe was a brute, but he was no fool; and certainly would neither have submitted to such practice, nor, what I presume was the case, have directed it for himself, without knowing that it was necessary; and though not, perhaps, altogether safe, at least not near so dangerous as the disease which it was intended to cure*."

Of the subject of blood-letting in general, there is one view which I apprehend has not been sufficiently adverted to, but of which it would be well not to lose sight. It is an established pathological principle, that inflammatory diseases of cold climates possess so much more of the inflammatory character, that they require more powerful means for the subduction of the sthenic action, than the same class of diseases do in warm climates. Though in tropical climates the morbid action may be more violent and rapid, the system seems less able to withstand the depletory remedies, and the disease sooner yields to their influence. The inference from this will be, that in hydrophobia, the same liberal blood-lettings which were employed in India, will, with us, hardly be sufficient, unless under very favourable circumstances indeed. The remedy must therefore be more largely used. Forty, or fifty, or sixty ounces of blood during the progress of a violent disorder, though it may be a large loss in such a situation and climate as India, is by no means an excessive detraction in the inflammatory diseases of this country. Consequently it will, perhaps, be apparent to others as it is to me, even from this partial view of the subject, that though the remedy may have failed with us, the failure is probably as much to be attributed to the sparing or the tardy employment of it, (proceeding from unavoidable causes,) as to the want of power in the remedy, when properly pushed, to accomplish a cure. This consideration ought to lead to a much freer use of the lancet in hydrophobia than has hitherto been resorted to in this country, or even in India. To employ it to an extent short of subduing the intense action of the disease, is manifestly to use it to no curative end whatever. In all probability it must have a contrary effect, while at the same time it unfairly brings the remedy into disrepute.

* Additional Memorial, p. 459.

But leaving for a time wholly out of the question all hypothesis and speculation respecting the probable good or bad effects of blood-letting in hydrophobia, let us for once revert to the plain practical point, and put this simple question: In any common case of a patient being suddenly seized with intensely agonizing pain in the region of the stomach, retching, vomiting, eructations, oppressed breathing, vertigo, cephalalgia, tinnitus aurium, small frequent pulse, what system of treatment would a practitioner pursue? I am inclined to think he would commence by prescribing a copious detraction of blood. Some are of opinion, perhaps, that he would not; and, amongst other reasons, might urge the state of the pulse. I reply, that the state of the pulse ought not to prevent him. In gastritis, enteritis, &c. this very condition of the circulation is the precise criterion sought for, and deemed decisive of the necessity of having recourse to blood-letting. Then in one disease we would employ and take advantage of a test to direct our practice, which we arbitrarily refuse to apply to another under exactly similar circumstances. Farther I hold, that the inducements to such depletory practice, if they were not already sufficiently strong in the mind of such a practitioner, would be still more enhanced if he came to reflect, that in the affection which he was called upon to treat, the most powerful articles in the Pharmacopœia had been tried again and again to no purpose. If to all these incitements it were superadded that the most indubitable evidence had been brought forward of blood-letting having in another county produced the most salutary effects in the same complaint, he would certainly be justified, nay it would be incumbent on him to take the first opportunity of putting the practice to the test of experiment, by giving his patient the benefit of it: nor would it be either very candid or prudent to discredit the efficacy of such a remedy, though it should fail more than once. What would have been the fate of many of our best remedies, had they been condemned to oblivion on similar terms?

There is a case recorded in the first volume of the Edinburgh Medical Essays and Observations, which, for its practical utility and information, is worthy of being inscribed in letters of gold. The patient, a young man, was seized with a violent affection of those parts which most commonly suffer in hydrophobia. The disease assumed all the characteristic appearances of the hydrophobic state, amongst which were exquisite pain at the upper orifice of the stomach, attended with difficulty of breathing, anxiety, coldness of his extremities, convulsions of the diaphragm, pulse much oppressed, very irregular, and often intermitting; heavy sighing, the look often ghastly, difficult deglutition, spouting saliva, frequently horror of liquids,

&c. The physician who attended him, Dr. John Innes, who probably had no theory to serve, save that most excellent of all theories, the administering of relief to his patient, treated the case according to the dictates of his own mature judgment. Fortunately too for the young man, the doctrines of spasm, vitality of the blood, nervous irritability, dimished nervous energy, tendency to putrefaction, &c. had not, I presume, been then so much in vogue as they have been since. As a plentiful bleeding had relieved a similar complaint to which the same patient had been subjected, a few months before, Dr. Innes supposed, (good, easy man,) in the usual hum-drum way, that a bleeding might relieve him again. He accordingly had him blooded to a large amount and with manifest and instantaneous relief*. The severity of the symptoms recurred, and the bleeding was repeated with the same beneficial effects. In a word, the same aggravation of symptoms occurred no less than eleven times, and the blood-letting was performed as often; till at last the disease gave way and was subdued, and the young man's life saved, when, in all probability, he must have otherwise perished. The quantity lost in the course of, I believe, not more than three days, was f℥cxvi, nearly four English quarts, and probably more than a third of all the blood in his body; yet the effects were most surprising and salutary, nor did his recovery afterwards appear to be retarded a single day by such an enormous loss. The physician was not intimidated by the state of the pulse; on the contrary, its very weakness and fluttering, with the chilliness of the extremities, and other symptoms which would have appalled a heart less stout, became at last to his discriminating mind an indication of the necessity of pushing the remedy still farther. The youth was repeatedly to all appearance in a state of death-like syncope, or rather in *articulo mortis*, when his sagacious physician snatched him from the jaws of death, by his boldness and decision. I must own I never met with a case that inspired me with more confidence in the resources of the healing art, or with more unfeigned respect for the character of any physician, than this has for that able and intrepid practitioner of the old school.

No one will have any hesitation in granting, that the case of which I have just given but an imperfect abstract, was either a case of hydrophobia, or it was not. If it were, the cure was effected by blood-letting exclusively. *Quid est desiderandum?* If

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* It is both curious and important to know, that Mr. Kerrison himself seems upon the whole to incline to the notion that there was an apparent abatement of some of the more violent symptoms, in consequence of the bleeding, in his case of hydrophobia already alluded to.

it were not, it approached to it, or resembled it so nearly, that I submit it to the candour of every one, whether we are not warranted in putting in practice in hydrophobia a remedy which proved so eminently serviceable in a disease in every respect so closely a kin to it. I would therefore take the liberty of recommending all those who would throw cold water on the practice of the acute and intelligent Dr. Shoolbred, to ponder well upon this case of Dr. Innes. Let them divest their minds of all hypothetical doctrines, and think only of flying with avidity to any resource that holds out even the possibility of relieving one of the most deplorable maladies in the whole range of human calamity.

From all these and various other arguments which might be urged, the necessity will, I should hope, be evident of venturing much farther with blood-letting in hydrophobia than has been hitherto done. For if it be an inflammatory disease, or what amounts to the same thing, if it be a disease requiring plentiful bleeding for its cure, it is clear, that if in a disease so violent in its nature, rapid in its progress, &c. we go on abstracting a quantity of blood less by one half than is taken in diseases of the ordinary class, and not by a thousand degrees either so dangerous or fatal, we shall inevitably be oftener wrong than right in our reckoning; or, to use a nautical phrase, it will turn out in every instance to be a *dead reckoning*.

I might proceed to enlarge upon this subject, but I trust from what I have already advanced, something is likely to be gleaned; from which it will appear, that the grounds upon which the efficacy of the depletory system has been discredited, are not tenable, and even if they were, that the trials which have been made of the practice in Europe, are too limited and defective to admit of their being received as decisive of the question.

If I have been somewhat free in my animadversions, I have been so from no other motive, than that of an anxious wish to stem the current of disbelief, which seems (without any adequate reason that I am able to perceive) to be setting so strongly against a practice successfully employed, introduced and strongly recommended by a physician whose abilities are unquestionable, whose honour and good faith are, I presume, unimpeachable, and whose experience in the disease in question is unequalled. If upon the statements of such a man, corroborated as they are by the experience of others equally creditable, some reliance is not to be placed—if upon the faith of one or two imperfect and unsatisfactory trials, we are to proceed without farther ceremony to distrust the accuracy of his cases, and to denounce his practice, there is not a medical fact worth a straw, and we had better "throw physic to the dogs" at once.

and have done with it. Unreasonable scepticism is no more to be applauded than unreflecting credulity, and may sometimes be more productive of injurious consequences. If blood-letting, after an impartial and patient investigation, shall prove to be what opium and all the antispasmodics, stimulants, narcotics, &c. are, totally and completely useless, let it be instantly and for ever abandoned. But, for the sake of justice and humanity, let it not be hastily consigned to indiscriminate and unmerited condemnation.

I perhaps ought to apologize for having occupied so much attention, and I fear to very little purpose; nevertheless, I shall take an early opportunity of resuming the consideration of this highly important subject.

December, 1814.

III.

Observations on some Diseases, particularly Puerperal Fever, which occurred in Abingdon and its Vicinity in 1813 *and* 1814.

By Thomas West, Surgeon-Apothecary, Abingdon.

In the spring of 1813, several cases of mortification in the leg took place in a village near Abingdon; and three or four persons lost their limbs by this disease. Not having seen these cases, I am unable to give very accurate information concerning them; but in May the same year, a healthy robust lad, twelve years of age, came under my care with a similar complaint. He had violent pain in the legs and feet, which, after three weeks' continuance of excruciating torment, was succeeded by a degree of sphacelus, which rendered it necessary to amputate both legs below the knees.

From the first moment I saw him, the pulse was never less than 140; the tongue clean, but dry and glossy; the urine limpid; the legs and feet swollen; the heat of the legs below the natural standard; and the sensibility so morbidly acute, that any application in the least, above or below the temperature of the parts, exceedingly aggravated the patient's sufferings. He was covered with petechiæ, and frequently delirious: but ultimately recovered.

Two cases of a similar nature took place soon afterwards in a neighbouring village. One of these terminated fatally; the other, after a sloughing of part of the integuments of the foot, recovered.

In July, a few cases of erysipelas appeared; and in latter end of the same month, there were two cases of puerperal fever. During the autumn, cases of erysipelas now and then appeared: but it was not until the winter following and

the spring of 1814, that this disease became the prevailing epidemic. At that time, numbers, with trifling wounds, punctures of thorns, abrasions of the skin, &c. were attacked by erysipelas, accompanied by typhus fever; the disease answering to the *erysipelas typhoides* of Sauvages. A few instances of *erysipelas gangrenosa* occurred; three or four cases of which terminated fatally. In some persons, where there was no redness nor inflammation of the skin, the absorbents were inflamed, the axillary or inguinal glands became painful, indurated, and sometimes suppurated. This disease, after clearing the *primæ viæ*, was best combated with bark, wine, and opium.

The greater number of the puerperal cases took place when the erysipelatous constitution was at its height; and the attack generally commenced about 36 or 48 hours after delivery. In one instance only it commenced so late as the sixth day. In those cases where the attack was sudden, the rigor severe, the succeeding heat of skin very great, the thirst extreme, the pain in the abdomen, back, and head, violent, with hard and frequent pulse—bleeding at *the first onset, freely*, was of the greatest service, and a repetition of it attended with the best effects. An emetic was given after venesection; the bowels were evacuated freely, and kept open during the course of the disease. Blisters were applied to the abdomen, which, in every case coming under my observation, was swelled, tense, and tender to the touch. In cases of the above description, where the local pain was great, the pyrexia violent, and in which the lancet could be used freely and repeatedly, the event was generally favourable. But where the attack began in a more obscure and insidious manner, where the rigor was less manifest, the heat of skin less, the pain in the abdomen but trifling, the pulse quick and weak, the countenance anxious and depressed, and where the patient made but little complaint, bleeding was of no service, nor could it be repeated a second time without manifest detriment. Emetics, purging, and blisters were useless; nor did any benefit result from opium, wine, &c. Nearly all the cases of this description were fatal in a few days.

The following facts are, perhaps, deserving of notice:

First, the commencement and termination of erysipelas and puerperal fever were nearly simultaneous. The first case of erysipelas took place in July 1813. The first case of puerperal fever occurred in the same month. The last case of puerperal fever was in June 1814, after which there were but few cases of erysipelas; and most of these were slight. Since September I know not of a single instance of this disease.

Secondly, many of the nurses attending on lying-in women, as well as washer-women, were attacked with erysipelas in one or both arms, and in one instance without any sore on the hand

or fingers. A child was attacked a few days after its birth with erysipelas, which spread all over it, and terminated fatally.

Thirdly, while many cases of erysipelas and puerperal fever took place in some villages; other villages adjoining were totally free from either disease.

Fourthly, I know not of any instance of puerperal fever occurring in any village where there were not cases of erysipelas. The number of cases of puerperal fever that occurred during this period, which came to my knowledge, were upwards of twenty.

November 1814.

IV.

Two Cases of Puerperal Fever. By W. P. Dowthwaite, Tunbridge, Member of the Royal College of Surgeons.

Some practitioners make no distinction between puerperal fever and inflammation of the uterus. I have, however, been taught otherwise: and experience has proved to me the correctness of Dr. Haighton's remarks on this subject.

Inflammation of the uterus always begins with pain considerably below the navel, has no intermissions, and is accompanied with suppression of the lochia: symptoms of acute fever also attend; but the pulse rarely exceeds 120 in a minute. In puerperal fever, the pulse sometimes beats 140 and even 180 in a minute; no suppression of the lochia ensues; and the pain is always situated above or to one side of the uterus: the rigors are of much longer duration; and the patient is generally in a distressing heat and perspiration during the shiverings.

I have met with several cases of inflammation of the uterus, and always found a system of depletion sufficient to recover them; but, from the experience I have had in puerperal cases, I should think that very few would permit of the use of the lancet; and I believe it is generally considered that this fever is more liable to occur in cases where the lochial discharge has been greater than usual. The recovery of the two following cases I attribute to the administration of large and frequently repeated doses of muriatic acid.

CASE FIRST.

On the 2d of January 1812, the wife of Samuel Bellingham, of Pembury, was taken in labour, and delivered about half an hour before my arrival at her house. As I found the hæmorrhage profuse, I immediately removed the placenta; soon after which she became very faint; and continued in that state for several hours. I then gave her an opiate, and left her;

cautioning the nurse to give her some weak diluent only, in very small quantities and nearly cold.

3d. On visiting my patient, and finding that her pulse was 130, and not very small, I sent her a mixture composed of infusum rosæ et potassæ nitras.

4th. This day the pulse was the same in frequency as yesterday, but weaker; the lochial discharge was considerable, yet very pale and offensive. She was ordered a cordial bark mixture.

5th. About two hours before my visit, she had had a severe rigor, which lasted twenty minutes; and she now complained of intense pain in the head and abdomen. The pulse was 176 in a minute. A blister was directed to be applied to the region of the navel, and the use of the bark mixture to be continued.

6th. Not being able to visit my patient, I heard that she had had rigors every six hours since I left her, each paroxysm lasting from twenty to forty minutes. The mixture was ordered to be continued, and nourishment freely given.

7th. I found her in a very severe rigor, which lasted above an hour, and was attended with great heat and perspiration. About sixty minutes afterwards, I counted the pulse; it beat 180 in a minute. Under all these alarming symptoms I considered the case hopeless; but, recollecting the good effects of muriatic acid in lowering the pulse in typhus, I determined on giving it a trial in this case; and ordered twenty drops to be taken every three hours in a draught of infusion of cascarilla.

8th. I had the pleasure of finding my patient better, and her pulse reduced to 140. She had experienced no rigors since taking her new medicine, which was ordered to be continued, and three glasses of port wine allowed in twenty-four hours.

9th. Pulse was 130; no rigors had occurred; and the patient stated that she felt herself to be much better.

10th. Pulse 110; but as a considerable diarrhœa had supervened, the wine, sago, arrow-root, and other farinaceous matters, were desired to be freely given. In three days from this period the pulse fell to 90, at which point it remained for the space of eight days, when she began to decline; her appetite failed; pulse rose to 100; and the diarrhœa continued. I now therefore discontinued the muriatic acid, and gave her absorbent mixtures with opium. She complained of pain in the right hip, which, upon examination, I found inflamed; and in a few days it suppurated; when her pulse became less frequent, and her appetite returned: but soon afterwards the leg on the opposite side became much swollen. I now ordered her bark and steel, which she continued to take for several weeks.

At the latter end of February she was quite recovered, and able to superintend her family.

CASE SECOND.

Hannah Pillwane, in Tunbridge workhouse, was delivered on the 3d of January 1812. The lochial discharge was scanty; and, on the 4th day after delivery, she was seised with shivering, and a fixed pain below the navel. The pulse was 120; she complained of great pain in voiding urine; and the lochia entirely ceased. I immediately took 12 ounces of blood from the arm; gave her saline medicines with digitalis; and ordered her to be kept very low. On the following day she was considerably easier: the blood was sizy, but loose in its texture. I ordered her an aperient, which answered the intention very well.

Jan. 10th. I was sent for in haste, when I found my patient complaining of considerable pain on one side of the abdomen, and in the head. The pulse was 140 in a minute; and she had experienced three shivering fits in the course of the preceding night. As the case seemed altered in its character, and the woman was of a very weakly constitution, I did not hesitate to administer the muriatic acid in water; which proved ultimately successful, although she had several slight shiverings after its first exhibition.

November, 1814.

V.

An Account of a Dislocation of the Cervical Vertebræ. By W. B. Newman, Surgeon-Apothecary, Corsham.

Early on the morning of Thursday, the 15th of September ult. I was called to see Mrs. M——, aged 24, who (to use her own language) complained of her neck being put out. About two hours before, when in bed, she had been giving her child some food out of a butter-boat, and on replacing, with her left hand, the vessel upon the chair at the side of her bed, being fearful that it would fall, turning her head suddenly round towards that side, she instantly heard something pop in her neck, and felt great pain; but it soon subsided when she rested her head upon the pillow. In about half an hour afterwards she rose from her bed, and, having put her clothes on with great difficulty and pain, fainted away. In that state she still was when I arrived, which was about two hours and a half after the accident happened. Her head was inclining upon the left shoulder, presenting a very striking and curious appearance. I gave her a few drops of liquor volatilis cornu cervi, which

in a short time recovered her sufficiently to answer my questions. At first I thought the appearance originated from a dislocation of the clavicle near the sternum; particularly as she had not the use of her right arm; but on examining, I found that bone in its proper situation. She then told me her right arm appeared quite dead and useless. I ordered her to be taken up stairs and put into bed; when, upon examining the spinous process of the cervical vertebræ, I found a deficiency between the fifth and sixth vertebræ. I immediately placed her across the bed upon her back, so that my knees rested against her shoulder, when I gradually extended her head, and reduced the dislocation; the noise attending which was audible to all in the room; and the patient instantly announced herself to be much easier.

After the reduction I wished her to wear an apparatus, to keep her head in an erect position; but could not prevail upon her, because it had an awkward appearance. I, therefore, merely ordered a liniment to be rubbed on the back of the neck. In the evening she appeared quite as well as could be expected.

Sept. 10th. Her pulse was 68, and the skin moist. She had a good night's rest and was quite free from fever or thirst; but complained of a trifling pain in her head and eyes, and could not look downwards without increasing it very much. Her shoulders were very stiff and painful. I desired her to support her arms as much as possible, and gave her a saline aperient draught. She could move her head either way, but with greater facility towards the left side; moving it towards the other side occasioned pain, and especially when the head was brought towards the sternum. There was also some degree of pain when pressure was applied to the right side, but none on the left.

17th. She finds great ease when the arms are supported; but, owing to the child, cannot keep them constantly rested No feverish symptoms are attending, and she is much better than yesterday.

18th. Continues to get better in every respect, but cannot keep her arms sufficiently suspended.

19th. Much better than yesterday.

I have seen her several times since, and she continues to amend; but her neck is rather stiff. From the above symptoms, I think there cannot be any doubt of there having been a partial dislocation of the neck; indeed the paralysis of the right upper extremity, the head inclining upon the left shoulder, and the noise heard when extension was made, are sufficient proofs of that being the fact.

October, 1814.

VI.

A Case of Inflammation of the Heart and Aorta. By James Toone, Salisbury, Member of the Roy. Col. of Surgeons.

D. H., a robust florid seaman, of H. M. S. Poictiers, about twenty-four years of age, who had never been subject to disease, complained, May the 3d, 1812, of pain in the chest, and occasional difficulty of breathing, attended by a peculiar anxiety which he was unable to describe.

These complaints, he said, were not constant; he sometimes enjoyed a very considerable degree of ease, which seemed to be the case at the period of his application. No derangement of the system whatever was apparent; and as some suspicions were entertained that his complaints might originate in a desire to be exempted from duty, he was remanded, and ordered to apply when he found any recurrence of the painful sensations.

He was absent about thirty hours. At eight P. M., May the 4th, he was brought to the sick birth, by two of his messmates, in a state of syncope. His face was bloated, and of a purple hue; his breathing difficult in the extreme; each inspiration occupying a space of fifteen or twenty seconds. His extremities were cold, and his pulse (small and indistinct) communicated to the finger a sensation of the blood flowing over a pebbled surface.

It appeared that little could be done for his relief: a vein was opened in the arm, but no blood flowed; volatile medicines were attempted to be introduced into the stomach; but the attempt failed, and he expired without a struggle within five minutes from the period of his admission.

The ship was then at sea; and some absurd prejudices prevented the examination of the body, until seventy-two hours after death, when it was removed to Deal Hospital for interment.

From the heat of the weather, the putrefactive process had made such advances, as to render a very minute examination impracticable. The attention of the operator, Mr. J. G. W., surgeon of the ship, was more particularly directed to those organs, which the symptoms had evinced to be the seat of disease, the heart and lungs.

On reflecting the sternum, the lungs were found of their natural appearance, distended however with air, which was probably the result of the rapid decomposition which was taking place. The pericardium was much distended, and on cutting into it, was found to be filled with coagulated blood.

The heart was natural in size and external appearance; but in the cavity of the left ventricle were evident marks of inflammation; coagulable lymph was thrown out in patches, and several specks of osseous matter were visible. On cutting up

the aorta, its diameter was found to be considerably diminished; its coats were generally thickened; coagulable lymph had also been deposited between its coats, so as to form numerous projecting tumours of a light colour, and studded with gritty specks. Just above the attachment of the semilunar valves, its coats were very thin; and close to the mouth of the right coronary artery, a small aperture was perceptible, evidently the result of ulceration, and by which the blood had escaped into the bag of the pericardium, and caused the fatal termination.

In reviewing this case, I can only express my astonishment, that disease so extensive as the present, and in so important an organ, should have existed so long, as it must necessarily have done, without producing symptoms of a more marked and formidable kind: nor can I help recalling to my mind the coincidence which I thought apparent between the peculiar thrill of the pulse, and the flowing of blood over an unequal surface.

November 1814.

PART II.

ANALYTICAL REVIEW.

I.

Pathological Researches. Essay I. On the Malformations of the Human Heart; illustrated by numerous Cases, and Five Plates containing Fourteen Figures; and preceded by some Observations on the Method of improving the Diagnostic Part of Medicine. By J. R. Farre, M.D. 8vo. pp. 46. London. Longman and Co.

Ars conjecturalis is an epithet which has been so long applied to medicine, that it has become a settled dogma; and the professors of the art have themselves ceased to inquire whether this has arisen out of the nature of the subject itself, or the mode in which it has been investigated. Although in every other branch of science results have been traced to their causes; and, in reasoning upon these, a degree of certainty has been necessarily introduced, which impresses upon the propositions deduced nearly the character of evident truths; yet, in this, the most important, because immediately connected with the preservation of life, the physician, except in a very few instances, has no fixed principles of guidance; and is, consequently, more frequently indebted, for the successful events of his operations, to the efforts of Nature, or fortunate conjectures, than to his skill. But is this necessarily so? Is it im-

possible to trace morbid symptoms to their causes? and in medicine alone are we to reject the axiom, that the same causes must always produce the same effects? The blush of conscious shame spreads upon the cheek, in reflecting that although these questions are answerable in the negative only; yet so many in all ages have battened on the emoluments of the practice, without caring to remove the stigma with which the science has been so long branded, or making one effort to trace out its true principles. From this accusation, however, we must except the illustrious men who have, by their observations and inquiries, brought the study of the science to the state at which it has arrived. But these have been comparatively few; and the majority have satisfied their consciences, by repeating the cant of the superiority of experience over theory: and yet, if inquiry be instituted into the nature of their experience, it is found to consist merely in prescribing certain remedies which their predecessors prescribed before them; and its value to be constituted by the number of years they have been thus employed. That this is not the kind of experience which will rear a goodly structure for medical science, although the foundation has been so long laid, and centuries have been exhausted in collecting the materials, none will be found hardy enough to deny. The completion of the task we must still leave to posterity; but we shall rejoice, should it be the merited boast of the present age to have advanced, even in a moderate degree, the rearing of so important an edifice.

Impressed with such feelings, we hail the appearance of every work which treats on morbid anatomy. Indeed, we are of opinion, that, independent of an accurate knowledge of the healthy structure of the body, and a habit of minute observation at the side of the sick bed, no correct diagnosis can be formed, unless the physician has employed himself in inquiring into the nature of diseases through the medium of anatomy. The advantages which result from such a method, are thus ably enumerated by Dr. Farre.

" 1st, That this method, preceded by Clinical observation, affords the only means of distinguishing between diseases of function and diseases of structure, occurring in the viscera; and the most probable ground for the important opinion respecting the lapse of the former into the latter. 2dly, That it is capable of introducing great simplicity into the methodical arrangement of diseases, nosologists having exceedingly departed from nature in the multiplication of their species, and consequently of their genera; for, in tracing, by dissection, the morbid changes of internal organs, and on finding a very exact likeness between many of them, it is impossible not to perceive that numerous genera, at present received, are, in truth, but varieties in the stage, or in the seat, of one and the same disease. 3dly, That by rejecting the artificial forms, and stu-

dying only the natural or true species, it enables us to follow, with greater precision, their respective stages, to separate the characteristic from the anomalous signs which were noted in their histories, and, by thus establishing a more accurate diagnosis, to adapt the treatment not merely to the name, but to the form and stage of the disease.—p. ix, x.

In the proper introduction to this essay, which forms the first of a series on mal-formations of the heart, our author assigns as a reason for the title, *Pathological Researches*, that "it is intended to express chiefly a purpose of tracing the diagnostic signs of the imperfect functions of the organs, and of endeavouring to discriminate between the conditions which admit of curative, and those which admit only of palliative means."—p. xiv. The simple expressions, black and red blood, which are employed throughout the essay, he properly prefers to those which imply some chemical change in the fluid. But, while he thus avoids controversy, he does not shrink from giving his opinion on the changes produced during the pulmonary circulation; and states his preference of the opinion supported by the experiments and reasonings of Mr. Ellis, and the decisive experiments of Messrs. Allen and Pepys; that the oxygen of the atmospheric air taken into the lungs, is wholly consumed in the formation of the carbonic acid which is emitted; to that of Lavoisier, which maintains, that it is, at least, in part, absorbed; and that the red part of the blood is a true oxyd. He, also, adopts the opinion of those who consider that there are other sources of animal temperature, "besides that of respiration;" and that the skin, "in a degree, contributes to this important function." But to proceed to the examination of the essay itself.

In commencing his inquiries, Dr. Farre observes, that, "if the Imperfection of configuration be adopted as the ground of the classification" of the varieties of mal-formation of the heart, many species might be admitted; "but as these imperfections of structure lead to only two errors in the function of the organ," the whole may be arranged under the two following species:—

"I. *Malformations of the heart, or of its arteries, mingling black with red blood.*

"II. *Malformations of the heart, or of its arteries, only impeding the circulation of the blood.*"—p. 2.

The first variety noticed under the first species is the *Single Heart*, which, our author observes, has been improperly supposed to give the individual possessing it "the properties which belong to amphibious animals." The first sub-variety of the single heart, is that in which there are *two pulmonary*

branches from the aorta. As an example, the case of a child is given, "who lived seventy-nine hours after birth, and about thirty after the respiration was affected." The symptoms are perspicuously detailed. Among them, we consider the following the most remarkable:

"The action of the diaphragm was unusual, and at each contraction, which was very frequent, it forcibly bent inwards the margin of the thorax. The pulsations of the heart were too strong." —p. 3.

These occurred forty-eight hours after birth. He had previously appeared in perfect health, was lively, ruddy, and of a natural heat: "the meconium was properly evacuated; he took the breast eagerly, and slept easily." Even after the respiration became affected, and the above-mentioned singular action of the diaphragm occurred, he slept quietly the greater part of the night; and it was not until the next morning that the more distressing symptoms presented themselves. Although the action of the heart and diaphragm became vehement, yet the pulse at the wrist was not perceptible, and the skin became pallid and cold. The warm bath restored the circulation on the surface, and the skin did not again become pallid; but the powers of life gradually sunk; and he died without a convulsion. The dissection, which we extract, clearly elucidated the cause of the previous symptoms.

"The heart, situated naturally, was distended in the utmost degree with blood. Blood was extravasated under the pericardium, and very extensively into the cellular texture of the lungs, but there was no effusion into the cavities of the chest. The heart consisted of an auricle, a ventricle, and a single artery. The auricle was divided from its appendix more distinctly than it is in the natural structure, by an intermediate septum, which, however, gave a free passage to the blood through a large central aperture. The venæ cavæ opened into the auricle and the four pulmonary veins into the appendix. There was only one ostium ventriculi. The ventricle was single, and had a valve, which, although it was neither tricuspidal nor mitral, more nearly resembled the former than the latter. From the ventricle one artery, the aorta, furnished with semilunar valves, arose. Its two first branches were pulmonary, very large, and situated close to each other. The third branch was still larger: it came off at a right angle from the aorta, and gave origin to the arteria innominata, the left carotid, and left subclavian arteries. It also sent down a single artery to the heart, which served instead of the coronary arteries. The continuation of the trunk had the usual appearance of the descending aorta. At the origin of the pulmonary branches, the aorta was considerably contracted in its diameter; its coats were separated by blood which had been extravasated between them from the vasa vasorum, and were also thickened; the inflammation extended along its internal coat towards the heart, and

its valves were excessively red. All this was evidently recent, and probably caused by the increased current of blood through the pulmonary branches, the distention of which seemed to have impeded the circulation through the aorta, by making a kind of valvular process at its base. In consequence of such obstruction, too much blood was sent through the pulmonary branches, more was returned to the heart than it could eject, the artery inflamed at the obstructed part, the circulation was thus more and more impeded, till the cellular texture of the lungs was filled with blood, and the overloaded heart ceased to act."—p. 3, 4.

The second sub-variety of the single heart is marked: "*One pulmonary branch from the aorta.*" The case illustrative of it is not detailed; but the reader is referred to the Phil. Trans. xcv. p. 228, in which a particular account of it is given by Mr. Standert. "The heart consisted of a single auricle, ventricle, and artery, the aorta which sent off the branch referred to in the situation of the ductus arteriosus. The child lived ten days, and had a blue colour of the skin; but the respiration, temperature, and muscular action, were not materially affected."

The third sub-variety is intitled, "*Heart transposed. The aorta and pulmonary artery, branching from a common trunk.*" The heart in this case "was situated in the epigastric region, and embedded in a cavity formed on the superior surface of the liver." The colour of the skin was natural; as was also the temperature; and although the child was weak and in pain, yet it sucked heartily, slept, and had proper evacuations of urine and fæces. It lived seven days, and died of inflammation of the heart, caused by some peculiarities in the monstrosity of the abdominal integuments."

In his remarks upon the three sub-varities we have briefly quoted, Dr. Farre observes, that in the single heart, the degree of blue colour of the skin is regulated by the size of the pulmonary vessels; "the larger they are, the less" will the blue colour be remarkable. In the second of the cases only this sign was present, owing to too little blood being sent to the lungs: in the first so much was transmitted, that the circulation was impeded.

"In *a*," (the first) "the laborious actions of the heart and diaphragm were the signs of an impeded circulation through the aorta; in *b*, the blueness of the skin was the sign of a diminished circulation through the lungs. Thus, if this inquiry were limited even to I. 1.," (the first variety,) "blueness of the skin could not be admitted as the essential or diagnostic sign of this variety of malformation."—p. 7.

Although the malposition of heart in the last case afforded a larger surface of lung, yet, the redness of the blood in the first case proved that that was superfluous. What difference in the chemical changes of the inspired air was produced by the

extension of the surface of lung was not ascertained: but our author properly observes, that the idea of the blood being more oxydated, is rendered very questionable by the experiments of Mr. Ellis, and those of Messrs. Allen and Pepys.

The second variety of the first species is the "*imperfect double heart;*" the first sub-variety being the "*unclosed foramen ovale;*" two cases of which in healthy adult subjects, one of which was Mitchell, the murderer, are noticed; but it is a circumstance so common, Dr. Farre justly observes, that in the dissecting rooms of the anatomical schools, "the observation of that student who has not witnessed it, even in the adult, must have been exceedingly limited." Yet *Corvisart* puts it down as a rare occurrence, and productive of disease; and Mr. Allan Burns asserted, that it is frequently productive of dyspnœa. Our author satisfactorily explains the error into which the former distinguished writer has fallen, in describing the diseased state which he ascribed to this cause; and does not deem the evidence of Mr. Burns conclusive on this point. That the open state of the foramen ovale "does not usually give signs of mingled black and red blood," is owing, in our author's opinion, to the obliquity of the communication;

—"the valvular office must by this very arrangement be still performed, if not perfectly, at least so well as to prevent any perceptible disorder of the vital functions."—p. 8.

The next sub-variety,—"*dilated foramen ovale, or imperfect septum auricularum,*" is more rare; and likely to be productive of dyspnœa: at least, our author supposes this to have occasioned cough and dyspnœa, in a patient who died of apoplexy, at the age of forty. But besides the open foramen, the cavities of the heart were found to be enormously dilated; a circumstance which we have known to produce the symptoms that characterized the complaints of this patient, without an open state of the foramen.

The third sub-variety of the double imperfect heart, noticed by Dr. Farre, is the "*dilated foramen ovale, with an open ductus arteriosus,*" a malformation which is always productive of disturbance of the vital functions. Some facts, illustrative of this state, are quoted from different writers; and a very interesting case, in which our author had an opportunity of examining the malformation, is minutely detailed from the notes of Mr. English, by whom it was communicated. We regret that the length of the case prevents us from extracting it.

The fourth sub-variety, characterized by the "*ostium arteriæ pulmonalis communicating with both ventricles,*" has been observed by Mr. Astley Cooper only, from whom our author obtained histories of it, and permission to make the drawings

by which it is illustrated. In one case, the malformation of the heart appears to have been a family disease, as other children, of the same mother, died with symptoms of it. The child particularly referred to, rather panted than breathed; "his skin was always of a dark purple colour, and he died in convulsions." The following particulars respecting the case are given from a note made by Mr. Cooper.

"His breathing, for a minute, was regular, it then stopped with a deep sigh, the whole body was agitated, the heart fluttered violently, and again he breathed regularly. He had nine or ten shrieking fits before he died.

"The sternum was more convex than usual, the heart large, its right ventricle more curved, thicker, and larger than natural. The pulmonary artery arose from the right ventricle, communicated with the left, and formed the aorta descendens, besides giving off its usual branches to the lungs. The aorta ascendens arose naturally, but passing upwards, it terminated in forming the arteria innominata, the left carotid, the left subclavian, and a very small branch, which was pervious only a part of its course to the descending aorta."—p. 14.

The next sub-variety, the "*dilated foramen ovale and contracted ostium arteriæ pulmonalis*," is well illustrated by a case described by Morgagni, in his xviith Letter, Art. 12, 13.; and another by Tacconi, translated in the 6th vol. of the London Medical Journal, from the Commentaries of the Academy of Sciences, at Bologna. The subjects of both these cases lived to above the age of sixteen years, and although in the first the skin was livid, and the respiration always oppressed; yet, in the second, "the undisturbed state of the breathing does not accord with the morbid appearances."

The peculiarity of structure connected with the sub-variety which follows, intitled, "*dilated foramen ovale, with an open ductus arteriosus, and impervious ostium arteriæ pulmonalis*," is thus described:

"The venæ cavæ enter as usual into the right auricle, which communicates with the left by a dilated foramen ovale. The right ostium ventriculi is formed; but the re-duplication of the internal membrane of the auricle, which, being extended from the ostium ventriculi, should hang within the ventricle, is unfinished; the beginning of it, termed annulus valvulosus, exists; but, from this ring, the treble productions, called valvula tricuspis, and also the chordæ tendineæ and carneæ columnæ, are wanting. Here, too, ends what there is of a right ventricle: nearly the whole of that space which it should occupy is filled by muscular fibres. The ostium arteriæ pulmonalis is closed; but from that impervious point the pulmonary artery is continued, and communicates with the aorta by the ductus arteriosus. The pulmonary veins open as usual into the left auricle. The left ostium ventriculi, the valvula mitralis, the ostium aortæ, and valvulæ semilunares, are perfect.—p. 18, 19.

This description is illustrated by a case of Dr. William Hunter, in the Medical Observations and Inquiries, vol. vi. p. 291, in which, however, no "observation was made on the temperature of the infant," who lived thirteen days; and another from the 5th vol. of the London Medical Review, which had the following peculiarities.

"The foramen ovale is not merely open, but its valve is very imperfect; so that there is a very large aperture of communication between the auricles. In the septum ventriculorum some of the muscular fibres are wanting, and the lining membrane of the left ventricle has three foramina, giving it a cribriform appearance. In the place of the pulmonary artery there is an impervious filament, leading to a very large ductus arteriosus, which may be traced from the aorta into two pulmonary branches. The trunk is much larger that an ordinary ductus arteriosus, but is smaller than a pulmonary artery. A deep purple colour of the skin was observed soon after birth, attended with difficulty of breathing and convulsions; but the heat of the body, it is said, was not below the natural standard. The infant died on the seventh day."—p. 19.

We regret that our limits prevent us from following our author through his descriptions of other sub-varieties of the double imperfect heart; after merely mentioning, therefore, their titles, we shall pass on to examine his observations on the general effects of this variety of malformation in the functions of the living body.—The following are the titles of the remaining sub-varieties:

"I. 2. *g. Perforation of the Septum Ventriculorum.*
"I. 2. *h. Ostium Aortæ communicating with both Ventricles.*
"I. 2. *i. Transposition of the Aorta and Pulmonary Artery.*"

From the various facts which he has detailed, Dr. Farre concludes "that the imperfect double heart differs less in function than in form from the single heart:" in both cases, black and red blood are mingled; a circumstance which, he observes, "has attracted more attention than the difficulty with which the circulation is generally performed by a malformed heart." The following is the sum of his remarks on the symptoms, which usually mark the former:—

1. *A permanent blue colour of the skin.* This approaches to black, "in proportion to the diminished size of the pulmonary artery, and the ductus arteriosus:" But from several of the cases related, in which this sign was not present, it appears, in the infant at least, that,

—"if the full proportion of blood be circulated through the lungs, although the red blood be subsequently mixed with an equal proportion of black blood in the heart, yet a black colour will not be imparted to the skin."—p. 31.

Although, in impeded circulation through the heart and

the lungs, the skin is pallid, transiently livid, of a violet colour, or permanently blue; yet this last "is far more characteristic of mingled black and red blood, the former being in excess;" and therefore "constitutes the most material part of the diagnosis."

2. *Coldness of the skin.* This is also a sign of an over proportion of black blood; but variation of structure produces very considerable diversity in this respect: and the signs of diminished temperature at the surface of the body are always "manifested in proportion as the pulmonary artery, or, in the event of the obliteration of that artery, the ductus arteriosus, is diminished in size."

"3. *Paroxysms of irregular respiration—of screaming—of panting. Respiration, remarkably quick—continually difficult or laborious—sense of suffocation—cough.* The disturbed state of the breathing by paroxysms, seems to be more characteristic of mingled black and red blood; but the dyspnœa, of difficult transmission of blood through the heart and its great vessels.

"4. *Palpitation—vehement action of the heart—pulse irregular, quick, and weak—intermittent. Serous effusion* into the cavities and cellular membrane, manifested by œdematous legs and bloated face. *Hemorrhages* from the nose, gums, lungs, &c. These signs, varying in degree, and more or less combined, are found in many cases of malformation, and are indicative only of an impeded circulation.

"5. *Torpor of the Brain—Epilepsy—Apoplexy, Paralysis—Syncope.*——These effects are to be attributed partly to an impeded circulation through the heart, to the accumulation of blood in the brain, and the consequent pressure sustained by that organ, and partly to the want of those renovating powers which red blood may impart to the brain."—p. 32, 33.

6. *Defective Nutrition.* This circumstance varies very much, according to the state of the alimentary canal; but if the digestive organs perform their functions tolerably well, there is no reason why there should not be an accumulation of adipose matter; and cases have been described, which prove that such may be the case.

In concluding his observations on the subject of mingled black and red blood, our author, judiciously, calls the attention of the profession to the following desiderata:—

"1st, The accurate measurement, by the thermometer, of the internal and external temperature of the patients.—2dly, The quantity of carbonic acid gas which may be formed by the subject of a malformed heart, during successive acts of respiration in a determined period, compared with the quantity formed by a perfect subject of like age and figure."—p. 34.

Some additional cases of very great interest are added, in which the temperature was particularly attended to; and we lament that we cannot present our readers with an abstract of

them. One observation, however, we shall mention, as it involves a point in physiology, which we are very desirous of seeing fairly investigated. In consequence of observing a comparatively high temperature maintained in a youth, in whom the stream of blood which fed the pulmonary arteries was extremely small, Dr. Farre observes:

"There seems to be sufficient evidence that the function of respiration is a source of animal heat. But I am free to confess my opinion, that it is not its only source. Priestley's celebrated experiment proved, that black blood should be converted into red blood, without the actual contact of air, or the structure of lungs. In like manner, although the lungs may be best adapted to perfect the changes which produce animal heat, it is sufficiently probable that this important operation does not exclusively belong to them."—p. 41.

Of the second variety, "MALFORMATION OF THE HEART, OR OF ITS ARTERIES, ONLY IMPEDING THE CIRCULATION OF THE BLOOD;" two sub-varieties only are noticed.

"*a. Left Ostium Ventriculi contracted, and Mitral Valve rigid.*
"*b. Ostium Aortæ narrowed by having Two instead of Three Semilunar Valves.*"

After discussing in the same masterly manner this part of his subject, our author concludes with the two following questions: "1st. Is there any other organ, by aid of which the imperfect changes of the respiratory function may be, in a degree, compensated?—Can any thing be done in these cases to favour the influx of red blood into the aortic system?" In answer to the first, the skin is pointed out as an organ by which temperature, at least, may be supplied; and to the second, position is supposed to be the best means of obtaining the object proposed.

Our readers will have already anticipated our opinion of this essay to be highly favourable. In some degree the design is novel; and in its execution Dr. Farre has displayed both industry and talent. With regard to the style, if it be not elegant, it, yet, possesses one of the highest excellencies of philosophical writing,—plainness and perspicuity. The plates are neatly engraved; but, in a work in which the aid of the pencil and the graver are so much in place, we should have been better pleased, had the figures been less in outline; although it might have been requisite on that account to have added to the price of the work.

II.

Traité des Poisons, &c. Par M. P. ORFILA. Tome Premier, 2d Partie.
(*Continued from* vol. ii. p. 501.)

IN pursuing the plan with which we commenced our examination of this work, we have now to present our readers

with M. Orfila's observations on the remaining species of the first class of his arrangement, the corrosive poisons. The fifth species, *Preparations of Tin*, comprehends two varieties only,

" 1. The muriates of tin.
" 2. The oxides of tin."

Tin, in its metallic state, exerts no deleterious influence on the animal frame; our author, therefore, passes rapidly over the chemical history of the metal itself, and proceeds to the examination of that of the muriates.

The muriate of tin of commerce, the preparation most likely to come under the attention of the medical practitioner as a poison, is a salt of a yellowish white colour, consisting, as it is usually found, of bundles of small needle-shaped crystals, of a strong styptic taste, attracting moisture from the atmosphere, and giving out, when thrown upon hot coals, a thick acrid smoke. It is partially soluble only in water; but the solution is transparent and colourless; and reddens the infusion of litmus. The effects of the chemical re-agents on this solution are well known; we will, therefore, notice those only of substances belonging to the vegetable or the animal kingdoms.

" A saturated solution of sugar in water produces no change on this solution.

" It is copiously precipitated bright yellow, by a strong infusion of tea, and by the alcoholic infusion of galls. If a small portion of the salt be dissolved in Burgundy, the wine is instantly rendered turbid, and lets fall a violet-coloured precipitate.

" Albumen precipitates the salt white: but an excess of albumen, or of pure muriate of tin (proto-muriate), readily re-dissolves the precipitate.

" Gelatin instantly decomposes the solution, and produces a copious, floculent, white precipitate.

" The action of milk is more remarkable than that of any other of the animal fluids. A few drops of the solution changes into thick curds a large quantity of milk. These curds, washed and dried, are of a yellow colour, friable, and sufficiently hard to be pulverized: they resemble and smell like dried cheese; and are not easily altered by exposure to the air. Analysis has convinced me, that, besides the animal matter, they contain muriatic acid and oxyd of tin. When heated with a solution of pure potass, they are decomposed and partly dissolved; the potass unites with the muriatic acid, and by filtering the liquid, and boiling it for twelve or fifteen minutes, on the addition of nitrate of silver, a precipitate of the muriate of that metal is obtained. If, instead of the solution of potass, the alkali in substance be employed, and the mixture calcined in a crucible, the animal matter will be soon decomposed; and the charcoal thus formed uniting with the oxygen of the oxyd of tin, the metal is revived. The tin appears of a yellowish white colour, and may be readily recognized by its action on concentrated nitric and nitro-

muriatic acids. By means of the latter acid, also, which changes the tin into a proto-muriate, the presence of the metal may be ascertained, when it is impossible to separate or even distinguish its particles, amidst the large proportion of charcoal with which they are mingled.

"Human bile, added to the solution of the muriate, produces floculent, filamentous curds, of a bright yellow colour."—p. 5, 6.

In order to ascertain the nature of the action of muriate of tin on the animal œconomy, our author made several experiments upon dogs; in some of which he injected the salt in a state of solution into the jugular vein; in others introduced it in its solid form into the stomach, and in one instance merely applied it to the external surface. In accounting for the fatal event, which was the result of all the experiments, he supposes, reasoning from the symptoms and the dissections, that it was produced in the first set by the lesion of the nervous system, and perhaps of the lungs; but in the second and third, by the corrosion and inflammation of the organs with which the poison came in contact: and, having observed analogous effects follow the exhibition of many other corrosive poisons, he concludes:

"—ce qui me porte à croire *que la meme substance vénéneuse peut exercer son action meurtière sur tel ou tel autre organe, selon le point avec lequel elle a été mise en contact.*"—p. 11.

A case is detailed, in which a company of people had eaten of soup, salted by mistake with muriate of tin instead of common salt; and although none of them died, yet very alarming symptoms presented themselves. The following are given as the general symptoms of poisoning by this salt:

"The taste austere, metallic, and very nauseous; a sensation of constriction of the throat, sickness, and repeated vomitings; an acute pain at the epigastrium, which soon extends to all the other regions of the abdomen; copious alvine dejections; the respiration slightly impeded; the pulse small, hard, and frequent; convulsive movements of the muscles of the extremities and of the face; and sometimes paralysis. These symptoms are almost always followed by death."—p. 13.

In cases of poisoning by muriate of tin, the poison exerts its influence chiefly on the mucous membrane of the stomach and small intestines, which on dissection displays evident marks of strong inflammation.

To ascertain the nature of the poison; if the individual be living, and it is obtained in a solid state, part of it must be dissolved in water, and the solution examined by the usual tests, the most decisive of which, in our opinion, is the nitro-muriate of gold, which produces with this solution a purple precipitate

—*the purple of Cassius.* The remainder should then be calcined in a crucible with caustic potass, to obtain the tin in its metallic form. In the event of the death of the individual, the only certain method is the calcining the contents of the stomach, and even its mucous coat; and afterwards treating the result, if the particles of tin be not visible, with nitro-muriatic acid, as has been already described.

In detailing the treatment of poisoning by muriate of tin, our author puts his usual question, *Existe-t'il quelque contre-poison du muriate d'étain?* The extraordinary effect produced by *milk* on the solution of this salt, led him, a priori, to consider that fluid as its antidote; an opinion which was in a great measure confirmed by some experiments on dogs, which are perspicuously detailed. When a practitioner, therefore, is called to see a person poisoned by muriate of tin, he should order as much *milk* to be taken as the stomach can easily contain, or rather more; so that the organ may be urged to evacuate itself from simple distension. The salt will be thus decomposed, and, probably, altogether rejected from the stomach; but if inflammation has already taken place, both local and general bleeding must, also, be employed, with tepid baths, fomentations, and emollient and narcotic glysters. Any nervous symptoms that supervene must necessarily be treated with opiates and the least irritating antispasmodics.

The effects of oxide of tin on the animal frame are stated by M. Orfila to be exactly the same as those of the muriates; and therefore, in cases of poisoning by the oxides, the same methods for discovering the poison are to be employed, and the same plan of treatment followed.

The sixth species of the corrosive poisons, *the preparations of zinc*, comprehends also only two varieties:

" 1. Sulphate of zinc.
" 2. Oxide of zinc."

In the history of metallic zinc, our author notices the attempts which were lately made in France to manufacture this metal into cooking utensils; and details the experiments of Vauquelin and Deyeux, who found, that it was attacked by water, vinegar, lemon, and sorrel juice, the muriates of ammonia and soda, and butter, with which it produces emetic and purgative compounds; and therefore cannot with propriety be employed in the formation of vessels either for preparing food, or for measuring or preserving liquids.

Pure *sulphate of zinc* is precipitated from its solution in water, white by potass, ammonia, and the prussiate of potass; pale yellowish-white, by the hydro-sulphurets of potass, soda, and ammonia; and of an orange-yellow, by the chromate of

potass; but these results are different when the sulphate of zinc of commerce, which contains iron, is employed. The action of the vegetable infusions and animal secretions on sulphate of zinc, presents nothing very remarkable; milk is curdled by the addition of a large quantity of the solution.

Perhaps no instance of a fatal result from the exhibition of sulphate of zinc is known; a circumstance, which, our author justly observes, may be attributed to its emetic effect, and its consequent expulsion from the stomach; for, in an experiment made by M. Orfila, in which a large dose of this salt was introduced into the stomach of a dog, and a ligature put round the œsophagus, the animal died; and the stomach, on opening the body, presented marks of inflammation. But although death does not follow, yet very disagreeable effects result from the accidental or inconsiderate exhibition of large doses of sulphate of zinc. The individual experiences

> " an acerb taste, a sensation of choaking, nausea, severe vomiting, frequent alvine dejections, pains of the epigastrium and lower belly, difficulty of breathing, an acceleration of the pulse, paleness of the face, and coldness of the extremities.—p. 81.

When, therefore, a practitioner is called to any person in whom these symptoms are present, arising from the exhibition of this salt, the vomiting must be for some time encouraged and assisted by large draughts of tepid water and demulcent liquids, particularly milk; which, besides diluting, also decomposes the offending substance; " ce fluide animal," says our author, " devroit être preféré aux solutions alcalines trop irritantes de leur nature." Emollient glysters should also be exhibited and frequently repeated, if from the feelings of the patient there is reason for suspecting that the poison has passed the pylorus: while bleeding and other means must be resorted to, according as inflammatory or nervous symptoms may supervene.

The *oxide of zinc*, perhaps still less than the sulphate, deserves to be regarded as a poison requiring much consideration. Our author gave it to dogs in very large doses; the effect was vomiting, but without any great suffering; " leur santé," adds he, " n'a point tardé à se retablir complettement."

M. Orfila enters more fully into the examination of the next species, the seventh of the corrosive poisons, *the preparations of silver;* one variety only of these however, *the nitrate of silver*, is put down by him as a poison. The consideration of this preparation has undoubtedly acquired more interest from its having been lately recommended, by high authority, as a remedy against epilepsy. Silver in its metallic state is not poisonous.

In giving the chemical history of nitrate of silver, our author first notices the effects of re-agents upon the solution of the pure crystallized salt, and then states, that the same occur when a solution of the salt after it has been fused, or as *lapis infernalis*, is employed. Of these we select the following as the most important to be known by the medical practitioner:

"Placed upon burning coals, it animates their combustion, swells, puffs up, and is decomposed, orange-coloured fumes of nitrous acid being extricated; and brilliant metallic silver remains upon the coals.

"Potass, soda, and lime water added to the solution, precipitate a deep-brown coloured oxide of silver; whilst the nitric acid is united to the base employed.

"Ammonia does not even render it turbid, owing to the solubility of the ammoniacal nitrate of silver which is formed.

"Arsenic and the arsenites precipitate a yellow arsenite of silver, which blackens when exposed to the air.

"A stick of phosphorus placed in the solution decomposes it; and while phosphorous or phosphoric acid is formed, metallic silver is precipitated.

"Albumen throws down a copious precipitate, in the form of heavy clots of a white colour, which readily dissolve in an excess of albumen.

"Gelatin produces no change in the solution of nitrate of silver.

"Milk is coagulated by nitrate of silver employed in sufficient quantity, forming it into very small white curds, and a transparent fluid."—p. 35, 37.

M. Orfila relates several experiments which were instituted with the view of discovering which organs are primarily affected, when nitrate of silver produces its deleterious action on the animal œconomy. In four of these, very small quantities, less than a grain, of the nitrate dissolved in water were injected into the jugular veins of dogs, who died in a longer or shorter space of time, according to the quantity of the salt employed and the strength of the animal. The most striking symptoms were vertigo, and extreme difficulty of breathing; "il ouvrait," says our author, describing one of the experiments, "la bouche, et il s'efforçait d'introduire de l'air dans les poumons en faisant des inspirations profondes; il ne pouvait pas marcher sans tomber sur la tête." The general appearances displayed by the dissection of the bodies, were deep red or black spots, and other marks of inflammation in many points of the posterior part of the lungs, and the entire loss of irritability of the heart; from which this query is suggested:

"Whether we may not conclude from these experiments, that a very small quantity of nitrate of silver, introduced into the course of the circulation, instantly destroys life by acting upon the lungs and nervous system?"—p. 41.

In two other experiments, the nitrate was introduced into the stomachs of the dogs, who, notwithstanding their cries indicated extreme suffering during the period they lived, yet respired with ease, and were not affected either with convulsions or paralysis. The stomach, when examined after the death of the animals, appeared much inflamed and eroded; and in one of the cases its mucous membrane was reduced to a kind of pulp; but the lungs, and every other organ, were apparently untouched; a demonstrative proof that death, produced by nitrate of silver introduced into the stomach, results from the corrosive action of the poison on the part with which it is in immediate contact.

The symptoms of poisoning by nitrate of silver are nearly the same as those which other corrosive poisons produce; and on dissection, the organs of deglutition, and the stomach, present very evident appearances of inflammation and erosion. To ascertain however, that the poison employed has been nitrate of silver, the liquid contents of the stomach must be filtered, and the fluid examined by the re-agents already enumerated; having a due regard to the changes in the colour of the precipitates likely to be produced by the food. But if this operation be unsatisfactory, the solid contents of the organ and the parts of its coats which have been most affected, must be dried and calcined, so as to reduce the nitrate to the state of metallic silver.

From the result of some experiments made upon dogs, M. Orfila is of opinion, that common salt, *(muriate of soda,)* in solution, is the antidote of nitrate of silver, when given in sufficient time to prevent the specific action of the poison on the coats of the stomach. But this conclusion is not perfectly consonant with the premises from which it is deduced; for although, in both the experiments related, the violent action of the poison was abated by muriate of soda, and neither inflammation nor eschar were perceived in the coats of the stomachs of the dogs, yet both the animals died within five days from the period of taking the nitrate. As muriate of soda, however, rapidly decomposes nitrate of silver, changing it into insoluble muriate of silver, which, from these experiments, does not appear to corrode the coats of the vessels, time may be thus gained; and, by subsequently adopting means to evacuate the whole from the stomach, the life of the individual may be preserved. Emollient and mucilaginous fluids should be afterwards freely exhibited, to allay the irritation excited by the poison; and

"when symptoms of inflammation in the abdomen present themselves, local and general bleeding, tepid baths, and emollient fomentations and glysters, must be employed."—p. 49.

The eighth species of corrosive poisons, *The Preparations of Gold*, contains two varieties.

" 1. Muriate of gold.
" 2. Fulminating gold."

The introduction of the muriate of gold as a remedy for syphilitic affections, and the powerful action of even the ninth part of a grain of it introduced into the stomach, first led M. Orfila to class the preparations of gold with the poisons.

After describing the metal, its insusceptibility of oxydizement by the simple action of heat and light, its solubility in the nitro-muriatic acid only, the effect of ammonia on the deuto-oxide thus produced in converting it into fulminating gold; and stating that it does not possess any poisonous property in the metallic state, our author enters upon the chemical history of the *deuto-muriate*. We shall notice the effect of those re-agents only which we conceive to be of importance, in regarding it as a poison, and which can be always readily procured.

" The deuto-muriate of gold crystallizes in needles of a deep yellow colour, and very styptic taste.

" Placed upon red hot coals, it is decomposed, being transformed into metallic gold, muriatic acid gas, and oxygenated muriatic gas," (chlorine).

" A small quantity of ammonia, poured into a solution of the deuto-muriate in water, precipitates it in reddish yellow flakes, (coleur de tabac d'Espagne,) which an excess of alkali changes to a canary yellow, (jaune serin). These flakes, washed, and dried at a gentle heat, constitute fulminating gold, which is a compound of deuto-oxide of gold and ammonia.

" Nitrate of silver decomposes the deuto-muriate of gold, and precipitates, from its solution, muriate of silver of a reddish colour, probably owing to some oxide of gold being thrown down with it. Ammonia, added to this precipitate, dissolves all the muriate of silver, and leaves the oxide of gold of a canary yellow colour.

" The alcoholic infusion of galls changes the colour of the solution of deuto-muriate of gold to red, decomposes it, and precipitates a chocolate coloured insoluble substance, whilst very thin pellicles of metallic gold are observed floating on the surface of the liquid.

" A few drops of the solution added to Burgundy wine, occasion a beautiful deep purple precipitate; and thin pellicles of gold also appear on the surface of the fluid.

" Albumen produces a very copious floculent yellow precipitate.

" Milk is instantly curdled, and precipitated in large clots."

Notwithstanding the assertion of M. Chretien, in his work intitled *Méthode Jatraleptique*, that " muriate of gold is more active in its effects on the animal frame than corrosive sublimate," M. Orfila concludes, from many experiments made upon dogs, that it is considerably less active than that salt when taken into the stomach; but more directly fatal when injected into the veins. In the first instance it acts in the same manner as sublimate, and the animal dies of inflammation of the coats

of the alimentary canal; in the second, or when it is injected into the veins, death is produced by its action upon the lungs, which become livid, do not crepitate, and display the most evident marks of having been affected by the strongest inflammation.

As no case of poisoning by this salt has yet occurred, the symptoms cannot be given; but should such occur, our author recommends the same method of treatment as for any of the other corrosive poisons, against the effects of which no specific antidote is known.

"Vomiting should be induced by gorging the stomach with mild mucilaginous fluids, and the inflammation of the intestines prevented or arrested by local and general blood-letting, tepid baths, emollient glysters, and fomentations."

In noticing the detonating property of *aurum fulminans*, which takes place when it is either suddenly heated or submitted to friction, our author adopts the explanation of that phenomenon proposed by Berthollet; who remarks, that the hydrogen of the ammonia combines with the oxygen of the oxide of gold, forming water; the azote, the other principle of the ammonia, at the same time assumes the elastic form, and from its volume being thus suddenly augmented, the detonation takes place. "The strong acids," says our author, "decompose it," (fulminating gold); an assertion which is not altogether supported by fact, for neither the sulphuric nor the nitric decompose it even when aided by heat.

Instances of poisoning by this preparation are quoted from Plenck, Hoffman, and Rivinus. The general symptoms are, constriction of the throat, anxiety, spasms, convulsions, vomiting, diarrhœa, copious salivation, great depression of strength, and death. No method of treatment is proposed.

The last of the metallic preparations which can be classed with the corrosive poisons, are those of *Bismuth*; which constitute the ninth species, and contains two varieties:

"1. Nitrate of bismuth.

"2. Sub-nitrate of bismuth, flake white *(blanc de fard)*."

The first of these salts, when treated by boiling distilled water, is decomposed: one portion, which is the *nitrate with an excess of acid*, being dissolved, while another, which is a *sub-nitrate*, is precipitated. We shall extract the most remarkable characteristics of each, as pointed out by our author.

"The soluble portion is colourless, reddens tincture of litmus, and has a styptic, caustic, disagreeable taste.

"Sulphuretted hydrogen, hydro-sulphuretted water, and the hydro-sulphurets decompose it instantly, producing an insoluble sulphuret of bismuth, of a black colour.

" Chromate of potass precipitates it of a beautiful orange yellow colour.

" The alcoholic infusion of galls decomposes it, and throws down a yellowish white floculent precipitate.

" Milk is completely curdled by this solution; the coagulum, which is white, is deposited in numerous clots, in a clear supernatent fluid."

The *sub-nitrate of bismuth* is not soluble in water.

" When it is treated with nitric acid at a temperature a little elevated, it is soon completely dissolved. The alkalis poured into this solution, decompose it, separating the white oxide; the hydrosulphurets precipitate black sulphuret of bismuth; finally, distilled water, employed in large quantity, occasions a white deposit, the *subnitrate of bismuth*, and the acidulous nitrate remains in solution."

Flake white, strongly calcined with charcoal, is reduced to the state of metallic bismuth.

In order to ascertain the action of nitrate of bismuth on the animal œconomy, several experiments were made upon dogs; from which our author concludes, that, when injected into the veins, it acts chiefly upon the nervous system; and when introduced into the stomach, it inflames and corrodes that viscus, acting at the same time upon the lungs.

" Il ne parait pas douteux," he however adds, " que le systeme nerveux, sympathiquement excité, ne soit la principale cause de la mort, surtout lorsque la vie est détruite en tres peu de temps."—p. 69.

Besides the symptoms usually produced by the corrosive metallic poisons, nitrate of bismuth excites the sensation of great heat in the chest, " respiration is rendered very difficult, and death is sometimes preceded by convulsions."

The effects of re-agents, already described, point out the method of detecting this salt when employed as a poison, if it be unmixed. Comérarius mentions an instance of the adulteration of wine by the oxide of bismuth dissolved in an acid. Re-agents cannot be depended upon for detecting such a fraud; but the metallic bismuth may be obtained by evaporating the fluid, and calcining the residue in a crucible with charcoal. Our author asserts, on the authority of the *Gazette de Santé*, par Maning, that the bakers in England sometimes employ the oxide and sub-nitrate of bismuth " pour rendre le pain plus lourd, plus blanc." Now although we are willing to believe that some substances are occasionally employed for the adulteration of flour and bread on this side of the channel, yet, we are slow of giving credence to the above statement; particularly as the intention is said to be " pour rendre le pain *plus lourd*;" bread being esteemed excellent, in this country, ac-

cording as it possesses the opposite quality, *lightness*. The fraud may be readily detected by calcination. The same means must also be resorted to for ascertaining the presence of the nitrate or subnitrate of bismuth, in the more solid contents of the alimentary canal, when there is reason for supposing that it has been the cause of death; although it cannot be detected in the fluid matters vomited, nor in those remaining in the stomach.

With regard to the treatment in cases of poisoning by nitrate or subnitrate of bismuth, M. Orfila states, as the result of experiment, that milk and mild mucilaginous fluids are to be preferred to all other medicaments. When symptoms of inflammation have attacked one or more organs, we must necessarily resort to bleeding and other antiphlogistic measures.

Having thus finished the consideration of the metallic corrosive poisons, M. Orfila commences that of the concentrated acids, which constitute the tenth species of this class of his arrangement. But the limits of the Review department of our Journal compel us, for the present, to postpone the conclusion of our analysis of this interesting work.

(To be continued.)

III.

Medico-Chirurgical Transactions. Published by the Medical and Chirurgical Society of London. Volume the Fifth. 8vo. pp. 546. Eight Plates. Longman and Co. Lond. 1814.

The publication, by the Medical and Chirurgical Society of London, of five volumes of Transactions, in a short period of time, is a proof of the activity of that society; and the promise of a volume annually evinces the buoyancy of its hopes. To the fifth volume, now before us, we may apply the term respectable, which it surely deserves, without incurring the blame of implying that it possesses the most exalted qualities. It contains twenty-six papers.

The first, intitled "*Cases of Periodical Jactitation*," by Dr. Robert Watt, of Glasgow, gives, in one of these cases, the history of a nervous affection, belonging to the genus *Chorea*, of extreme singularity. Mary Wardrop, the subject of this history, a girl ten years of age, was attacked, on the 1st of January 1813, with excruciating head-ache, and nearly incessant vomiting. When thus attacked, she required to be kept always erect; for on the body being inclined backward or forward, or to either side, the pain became intolerable. About the beginning of February, she was seized with a pro-

pensity to turn round upon her feet, like a top, with great velocity, and always moving in one direction. This motion continued from morning till night. Her tongue was sometimes moved very rapidly backward and forward; but this seemed to be voluntary and not convulsive. During the continuance of this motion, the head-ache was much abated; and she complained of nothing, except this incessant motion was interrupted. She expressed satisfaction when enabled by the attendants to increase the rotatory motion. At the end of February, the motion ceased, and the head-ache returned with redoubled violence; it continued for a fortnight, when she entirely lost the power of the muscles of the neck, so that the head, when unsupported, fell backward, forward, or to whichever side the body happened to be inclined. At the end of March she was seized with a new sort of motion.

"She now laid herself across the bed, and turning round like a roller, moved rapidly from the one end of the bed to the other. But as she turned always in one direction, when she arrived at this point she found it difficult to continue the rotatory motion with that rapidity which she wished. As this circumstance gave her considerable uneasiness, and as her attendants had seen the relief she seemed to experience from assisting her in her former motions, two of them, one at the head and another at the foot, lifted her regularly from the foot up to the head of the bed, from which she rolled down, and was again lifted up."

The friction produced in this way was so great, that a stout calico gown was worn to pieces in a day. This extraordinary motion was not influenced by circumstances of situation. She rolled rapidly along a garden walk; and when laid in the shallow part of a river, where she was nearly covered with water, and when she was almost on the point of being drowned, she began to roll round in the same manner, as if she had been in bed. In these movements she made little or no use of her arms; though when left to herself, she revolved from fifty to sixty times in a minute, for six or seven hours each day. About the end of April she was seized in a different manner.

"She now lay on her back, and by drawing her head and heels nearly together, bent herself up like a bow, then allowing them to separate, her buttocks fell with considerable force on the bed. She lay extended on her back for a moment, and then repeated the same thing, and continued to do so at the rate of ten or twelve times in a minute, for six hours at first, but gradually increasing, she at last continued it for fourteen hours a day."

After a continuance of this motion for five weeks, she was attacked with a propensity to stand on her head, in the following manner:

"Resting upon her knees and elbows, she placed the crown of her head a little farther down in the bed than the pillow; she then

elevated the trunk and lower extremities directly to the roof of the bed, and rested her weight partly on the occiput, but chiefly on the nape of the neck and shoulders; the chin touching, and seeming rather to rest on the top of the sternum; as soon as the body was elevated in this manner, all muscular exertion seemed to be withdrawn, and it fell down as if dead, the knees first striking the bed, and then the buttocks striking the heels. This was no sooner done, than she instantly mounted up as before, and continued to do so from twelve to fifteen times in a minute, for fifteen hours a day."

The principal part of this extraordinary history, thus far, Dr. Watt had from the father of the child; and its marvellous events have probably received a colouring from the feelings of a parent, and from a common propensity in the human mind, to make every narration interesting by rendering it incredible.

In the month of June, Dr. Watt first saw her; but for the statement of what he saw himself, we must refer our readers to the work.

During the progress of this odd disease, numerous forms of medicine were employed with little or no effect; and indeed, with the exception of *purgatives*, all seem to have been useless. Short notices of various histories of this violent form of *chorea*, are inserted toward the conclusion of Dr. Watt's account. They all occurred in Scotland.

II. "*Case of Abscess in the Brain.*" By Alexander Denmark, M. D.—On the 8th of August, a sailor, eighteen years old, had inflammation of the right ear, with purulent discharge, unaccompanied by fever. This ceased by the use of common means. On the 13th he had lancinating pain on the top of the head, with quick hard pulse and pyrexia. 14th, epistaxis in the night; tongue furred. On the 17th, a puffy swelling, diffused over the whole of the right parietal bone, was discovered. With various symptoms of injured brain, the patient languished till the 31st, and then expired. Examination after death explained the nature of the disease, which was a collection of pus in the brain. The peculiarity of this case is its arising so long after its cause. A year before the symptoms came on, the patient received a contusion on the head, which occasioned but little inconvenience at the time. The symptoms of inflammation commenced immediately after the cessation of the discharge from the ear, and ulceration of the brain quickly succeeded. The intolerable pain occasioned by the insinuation of the matter between the medulla oblongata and its investing membranes, down to the very extremity of the spine, seems to be of importance as a pathological fact.

III. "*A Practical Essay on* HEMERALOPIA, *or Night-Blindness, commonly called Nyctalopia.*" By R. W. Bampfield, Surgeon.—The disease which Mr. Bampfield denominates *hemera-*

lopia, is common, especially to seamen, in the East and West Indies, China, the Mediterranean, and all tropical climates; the history of it has been transmitted to us by very antient writers, but the cure has hitherto been left to Nature, or treated in a most irrational manner by Art.

This abolition of eye-sight by night has been generally denominated *Nyctalopia*; but the correctness of this is questioned by this author on good grounds; and he substitutes *Hemeralopia*. The distinguishing symptoms are, a partial or total deprivation of sight from sun-set to sun-rise, while the sight is distinctly preserved in the day-time. It affects both eyes at the same time: it is at first partial; but the sight by degrees becomes more impaired, until the patient is unable, after a few days, to discriminate the largest objects after sun-set, or by moon-light. All constitutions, ages, and eyes of every form and colour, are attacked indiscriminately.

The remote causes of idiopathic * *hemeralopia* are not well ascertained. Eating hot rice, according to Bontius and the Hindus, is one cause; sleeping with the face exposed to the brilliancy of day-light, the vivid reflection of the sun's rays from the sandy shores of hot countries, and bright moon-light, have also been enumerated as causes.

The opinion of Mr. Bampfield is—

"that too much light suddenly transmitted to the retina, or for a long period acting on it, may afterwards render it unsusceptible of being stimulated to action, by the weaker or smaller quantities of light transmitted to it by night; and hence, the proximate cause may consist in a state of insensibility of the retina to the stimulus of small quantities of light; or the retina may be in some degree paralytic or indisposed to action, from having been previously too strongly stimulated."

Scorbutic *hemeralopia* is induced by the same causes as scurvy in general. An altered transparency in the humours of the eye is considered to be an immediate cause; and the simple method of treating it, proposed by the author, is founded on this conclusion. "A succession of blisters to the temples, of the size of a half-crown piece, applied tolerably close to the external canthus of the eye, succeeded in every case of idiopathic *hemeralopia*." Under this treatment, the retina appeared to regain its irritability and sensibility to impressions from light, in the same gradual manner as it was deprived of it. "This simple remedy," says Mr. B. "has never failed in my practice,

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* Of the genus *Hemeralopia*, Mr. B. distinguishes two species;
Species I. Idiopathica.
Hemeralopia sine causâ manifestâ.
—— II. Symptomatica.
Hemeralopia scorbutica.

even in cases of long duration; nor have I found any auxiliary local one necessary." The *H. scorbutica* requires, however, the usual constitutional means of removing scurvy.

As the cure of this disease has often been spontaneous, fanciful and superstitious means employed at the period of spontaneous recovery have acquired the reputation of powerful remedies. Among these, various preparations and modes of employing the liver of animals seems the most out of the routine of medical practice. The oddness of the remedy induces us to make a short quotation respecting it.

"The liver of different animals has been selected as the sovereign remedy in this disease; and professional men have availed themselves of its use, in every variety of form and modification that ingenuity could well have devised. Thus, Celsus has directed the eyes to be anointed with the blood of the liver of animals, but gives a particular preference to that of the he-goat:—The same liver ought to be eaten.—'Sed sic laborantes inungi oportet sanguine jecinoris (maxime hircini, sin minus caprini) ubi id assum coquitur, excepto: atque edi quoque ipsum jecur debet.' Lib vi. Caput vi. In the Mediterranean and Italy, fumigations of bullocks', goats' and sheep's livers, boiled, fried or roasted, have been conveyed to the eyes by proper apparatus; their livers have been prescribed for diet; cataplasms, formed of slices of that viscus, have been applied over the eyelids at night, and the eyes have been anointed with the oil or fat obtained from it. The same practice has obtained in the West Indies. A strong testimony in favour of fumigations of bullock's liver, is given by Monsieur Dupont, in a 'Mémoire sur la goutte sereine nocturne epidémique ou nyctalopie,' wherein he states, that two hundred and fifty soldiers were cured of it in the following manner:—In a new glazed earthen pot, boil half a pound of bullock's liver, in four pints of water, until it is cooked enough for eating: when the steam arising from it is sufficiently cool, place the head close to the pot, surround it with a covering, and retain it there, with the eyes open, to receive the steam, until it no longer arises. One application in this manner is said to effect a permanent cure. Bontius bestows his testimony in favour of a fish's liver: he, indeed, recommends 'sternutatories, masticatories, purging and bleeding: but the *grand specific* in this disorder, and a medicine of which I have often experienced the virtues, is the liver of the fish Lamia, eaten crude with salt. The Dutch name of this fish is 'Een Haye,' and when exposed to the sun, there distils from it an oiliness, named in the same language 'Traen,' which anointed upon the eye is an immediate remedy. The livers of other fish are injurious.' —(Translation of Bontius by a Physician, pages 72, 73.) The fish here described, which in the Malayan language is called 'Lamia,' and in the Dutch 'Een Haye,' is the shark, the liver of which is to be eaten crude; and the oil which possesses such 'immediate' virtues of restoration of sight, is the train-oil from the shark. Bontius was often successful, but acknowledges he also was not, even with the *specific*."

(To be continued.)

IV.

A Special Report of the General Committee of the London Infirmary for curing Diseases of the Eye; in which certain Pretensions of Sir William Adams, advanced in the Official Papers published by order of the Hon. Directors of Greenwich Hospital, lately submitted to a Medical Committee, appointed by Government, and affecting the Rights of the Infirmary, and the Merits of the late John Cunningham Saunders, Esq. its Founder and Surgeon; are examined and disproved by the Correspondence of Mr. Saunders, and other Documents. 8vo. pp. 45. London. Longman and Co. 1815.

In our anxiety to see the respectability of every branch of the profession supported by the honourable conduct of its members; and when we had read the title only of the pamphlet now before us, we sincerely regretted its publication. But venerating those feelings of our forefathers, which led them to cast the stone of respect upon the cairn of departed worth; and impressed by the sacred nature of the trust Genius deposits in the hands of Posterity, to do justice to the value of claims, which cotemporaries may not have fairly appreciated; and having read the evidence adduced, we truly rejoice, that the Committee, under whose auspices this Report has been published, have apparently so completely succeeded in advancing their protecting shield to avert this attempt to set aside the just claims, and crush the fair fame of a much lamented and eminently deserving member of the profession.

If even those who have never dreamt of the "boundless fields of Fame;" who cannot conceive the nature of the feelings which fix the keen gaze of the votary of Genius on futurity, tread lightly upon his ashes; of what materials are we to suppose that man composed, whose hand would not only unreluctantly disturb the ashes of the honoured dead, but even efface the writing from the wall—the inscription from the monument. But the accused may defend himself; and although we must regard the result as correct, until evidence sufficient to counterbalance that which is now before the public, in support of the rights of the late Mr. Saunders against the claims of Sir William Adams, be adduced; yet, if such ever appear, we shall be as ready to do Sir William justice, as we are now to join in his condemnation.

For the information of those unacquainted with Sir William Adams' assumed discovery, it may be necessary to state, that in a Report of the Medical Officers of Greenwich Hospital,

dated December 27, 1813, a published abridgment of which was noticed in THE REPOSITORY, vol. i. p. 334; Sir William, then Mr. Adams, is stated to have *discovered a mode of curing the Egyptian ophthalmia*, which is considered by the reporters (conceiving Sir William to have been really the discoverer), "*as a great national desideratum.*" [benefit].

"By the adoption," continue they, "of *his* practice, we are of opinion, from what we have seen of its effects, that *a very large proportion of the seamen and soldiers who have been discharged the service, blind of the ophthalmia, might be again rendered fit for duty, or be made useful members of Society.*"—p. 6.

Now, although Sir William Adams knew this statement in the Report, which was most widely circulated, to be incorrect, yet, he did not take any means publicly to contradict it. The real discoverer of *his* mode of treating this species of ophthalmia was his instructor, the late Mr. Saunders; the General Committee, therefore, of the Infirmary for Curing Diseases of the Eye, have thought proper to support the fair claims of the founder of their Institution; and have, in our opinions, succeeded in convicting Sir William of an unjust assumption; and from his own letters to Mr. Saunders, published in the appendix, have proved, "that Sir William Adams was *not* the discoverer of a method of curing by an operation, &c., that form of the Egyptian ophthalmia, of which it was officially declared to the Hon. Directors of Greenwich Hospital, by their medical officers, that he was the discoverer."

The mode of treatment which Sir William Adams employs "and represents as his own discovery," for putting an *immediate stop* to Egyptian Ophthalmia at its commencement; "viz. the administration of emetics;" was employed by the late Mr. Saunders at the commencement of acute ophthalmia, whether of the external or internal tunics of the eye, when Sir William was his pupil. In the last stage of the disease, or "the granular state of the conjunctiva, a change of structure, which is occasionally produced by the previous acute inflammation, and which protracts the disease in its chronic form," Mr. Saunders excised the granular portions by the scissars, "and prevented the subsequent morbid growth of the conjnnctiva, by frequently injecting on it a solution of alum, or of nitrate of silver*." Sir William employs the same method, using only a knife instead of scissars; and on that ground assumed the merit formerly of improvement, and, in the Greenwich Report, of discovery.

In the same manner Sir William was indebted to his in-

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* *Saunders' Treatise on some Practical Points, &c. p. 99, note.*

structor for the operation which he has adopted in the congenital cataract of infants, and the soft cataract of adults: his modification of the operation, whether it be regarded as an improvement or otherwise, being no alteration of the principle, which alone constitutes the discovery.

Having given the above outline of the case, we conceive it to be unnecessary for us to enter farther into the detail of the evidence, which, in our opinion, is perfectly satisfactory. The following are the conclusions which the medical officers of the infirmary "consider themselves authorized to draw," from the facts contained in the Report.

"1st. That the peculiar change of the conjunctiva, produced by the purulent or Egyptian Ophthalmia, and causing the blindness, which so frequently attends the chronic stage of that disorder, was discovered by the late Mr. J. C. Saunders, the founder of this Infirmary, who practised a surgical operation, and employed other means for its removal, and was thus enabled to restore to sight many persons, whose cases had been previously considered desperate: consequently, that the Medical Officers of Greenwich Hospital, by asserting in the official papers published by order of the Directors, that the honour of the discovery and treatment above mentioned belong to Mr. now Sir William Adams, have been led (no doubt unintentionally) to circulate a statement completely unfounded, and tending to deprive Mr. Saunders of the merit exclusively due to him.

"2ndly. That Sir William Adams, then a gratuitous pupil of Mr. Saunders, learned from him the facts above mentioned concerning the Egyptian Ophthalmia; and that he has only made the unimportant alteration of removing the diseased growth by means of a different instrument.

"3dly. That it was the common practice of Mr. Saunders to employ emetics in the early stage of every variety of acute Ophthalmia; the claim therefore of Sir William Adams to originality, rests on no better ground in this, than in the former case.

"4thly. That the treatment of the chronic stage of the Egyptian Ophthalmia, is simple in its principle, and easy in execution; so that any surgeon, who has received an ordinary education in the treatment of diseases of the eye, may be considered as competent to understand and manage the complaint, when its nature has been explained.

"5thly. That the applicability of the operation by solution to the cataract of infants was first discovered by Mr. Saunders, and first *systematically* extended by him to the cataract of the adult.

"6thly. That the principle does not admit of variation, and that the mode of carrying it into effect by one or two operations, with the view of curing the disease in the shortest period possible, was fully tried and deliberately rejected by Mr. Saunders, because it endangered vision, by inflicting too much violence on the organ.

" 7thly. That the operation of Mr. Saunders puts the cataract in a condition to be absorbed with the least possible violence to the eye, and succeeds in restoring perfect vision in every variety of the soft cataract; but that, as Mr. Saunders himself anticipated, it has been proved by further trial to be less perfectly adapted to the varieties of hard cataract than the operation of extraction.

" 8thly. That the modification of Mr. Saunders's operation, practised by Sir William Adams, also puts the cataract in a condition to be absorbed; but, by inflicting greater violence on the eye, exposes the patient to the risk of an acute inflammation, imminently hazarding the safety of the organ."—p. 20—22.

JOHN RICHARD FARRE, M.D.
BENJAMIN TRAVERS,
WILLIAM LAWRENCE, } Surgeons.

In addition to these conclusions, we should be doing an injustice to Mr. Saunders if we did not extract his letter in reply to one from Sir William Adams, stating the effect which the success of the operation, on a soldier who had been discharged from the Chelsea depot, had made on General THEWLES; who was desirous of bringing it before the Government. It displays equally the manly keenness with which he felt the improper conduct of his friend, and the modesty with which he asserted his right to the discovery.

" Ely Place, May 1809.

" MY DEAR FRIEND,

" When my inclination to serve you induced me to lay open to you a scene for observation, which it was in my power to have kept private, and also to make you acquainted with such observations as occurred to me, and the means which I pursued in singular instances, I certainly confided in your honour not to anticipate me in the communication of such practice. Nay more, I unquestionably thought, that you would have observed a line of conduct that should have insured me from any hasty or premature developement of my notions.

" The disease alluded to, I first pointed out to your notice in the example of Mr. FIDKINS. I explained the nature of it. I cured him, and also a great number of other patients, by the method which I pursued.

" The management of this state of the eye makes a very important part of the work which I am about to publish, and I leave it to you to decide how far you can, consistently with the confidential state in which my friendship placed you, suffer such a practice to be published, under any form or modification whatever. Your views can only be the enhancement of your own professional character, whilst mine you neglect, even when your notions originated from the observation made on the case of Mr. FIDKINS. I have not failed in any instance where my practice has been fairly tried. I certainly do not think the commutation of the knife for scissars, or the change of one powerful astringent for another, sufficient to jus-

tify the anticipation of my communication. I trust to your sense of the advantages which you have received at my hands, to the acknowledgments which you have so often made for my friendship, that your conduct on this occasion will be such as an honourable man ought to adopt. In expectation of your immediate reply,

I remain, yours, &c.

William Adams, Esq. J. C. SAUNDERS."

V.

The Case of Johanna Southcott, as far as it came under his Professional Observation, impartially stated. By P. MATHIAS, Surgeon and Apothecary. 8vo. pp. 22. London.

BUT for the shameful and disgusting imposture of the female, whose name is contained in the title-page of this pamphlet, it contains nothing which could excite even a momentary interest. Pampered by the contributions of her credulous and weak followers, her life appears to have been shortened by indolence and gluttony. Mr. Mathias, who, from his statement, seems to have been one of the few who preserved their judgment, says, that, on opening the body, four inches of fat were found upon the abdomen: the *omentum*, besides being "four times the usual size, appeared one lump of fat:" and about "a dozen gall stones of various sizes and shapes (some of them as large as marbles) were found in the gall bladder," which was enlarged. No other traces of disease were discovered; the uterus was unimpregnated, "apparently free from disease; the ovaria were in a healthy state." She had the faculty of retaining her urine, until the bladder became so much distended, as to enlarge her bulk.

PART III.

SELECTIONS.

On the comparative Temperatures of Venous and Arterial Blood, and of different Parts of the Animal Body. By JOHN DAVY, M.D. F.R.S. *(Phil. Trans. for* 1814, *Part II.)*

To endeavour to ascertain the comparative temperature of venous and arterial blood, I have made a considerable number of experiments; some of which on lambs, sheep, and oxen, it

will be sufficient for me in this place to describe. In each instance, a long incision was made through the integuments; the jugular vein was laid bare, and the exact seat of the carotid artery found. The vein was then opened, and a small delicate thermometer introduced, and thrust about an inch up the vessel beyond the wounded part; and as the bulb of the instrument was small, the flow of blood was not stopped. When the mercury was stationary, its height was marked. The carotid artery next was divided, and the thermometer was immersed in the current of blood, and left there till it ceased to rise.

The following are the results of five experiments made on lambs, all of which were about three months old. The thermometer in the shade stood at 65.

1.	Venous blood...	102.5	Arterial blood...	104
2.	———	104	———	105
3.	———	104	———	105
4.	———	103.5	———	105
5.	———	104	———	105

The following results were obtained from three experiments on sheep, whose exact age I could not ascertain. The thermometer in the shade was 60.

1.	Venous blood...	103.5	Arterial blood...	104.5
2.	———	102.5	———	104
3.	———	103	———	104

The experiments on oxen were only two in number. The temperature of the air was 64.

1.	Venous blood...	100	Arterial blood...	101.5
2.	———	100	———	101

In both instances the oxen were knocked down before the vessels were opened; and as respiration had ceased in consequence of the injury of the brain and spinal cord, no difference of colour, of course, was perceptible between the blood from the jugular vein and that from the carotid artery.

These results, so different from what might have been expected, from the observations of Messrs. Coleman and Cooper on the temperature of the two sides of the heart, led me to repeat their experiments. The experiments in which I place most confidence, were made on lambs about four months old; and to these I shall confine myself at present. In each instance the animal was killed by the division of the great vessels of the neck: an opening was made immediately into the thorax, and a very delicate thermometer was introduced into the ventricles of the heart, by means of a small incision. The operation occupied so short a space of time, that in three instances the right auricle had not ceased contracting.

1. Venous blood...	104	Left.....	106
Arterial.....	105.5	3. Rectum.....	105
Rectum.....	104	Right ventricle.	105.5
Right ventricle.	105.5	Left.....	106.5
Left.....	106	4. Rectum.....	105
2. Rectum.....	105	Right ventricle.	106
Right ventricle.	105	Left.....	107

I cannot well explain the difference which exists between the results of the preceding experiments, and those of Messrs. Coleman and Cooper, which are directly opposite. Can the mode in which the animals they experimented on were put to death, be the cause of the want of agreement? In death by asphyxia, there is generally an accumulation of blood in the right ventricle; and in many instances I have observed, when the right ventricle has been distended with blood, little difference of temperature between the two sides of the heart.

To describe all the experiments that I have made to ascertain the temperature of different parts of the animal body, would extend this paper to an unusual length; and there is the less occasion for a long description, as the comparative results were very similar. It will be sufficient therefore here to notice the observations made on the human body, and on that of a lamb.

That the thermometer might be equally applied to all parts of the surface, its bulb, in form nearly cylindrical, was fixed to a small piece of cork, hollowed and lined with fine wool, and thus half its superficies was applied in each instance. The observations were made on the naked body at seven A. M. immediately after quitting bed. The temperature of the air of the room was 70. The following were the results obtained:

At the central part of the sole of the foot.....	90
Between the malleolus internus and the insertion of the tendo Achillis, where the artery is felt.....	93
Over the middle of the tibia.....	91.5
On the middle of the calf.....	93
Over the popliteal artery at the bend of the knee.....	95
Over the femoral artery in the middle of the thigh...	94
Over the middle of the rectus muscle.....	91
Over the great vessels in the groin.....	96.5
About a quarter of an inch below the umbilicus	95
Over the sixth rib on the left side where the heart is felt pulsating.....	94
Over the same place in the right.....	93
Under the axilla, the whole surface of the bulb being applied.....	98

About an hour had now elapsed from the commencement of the experiment. The thermometer, again applied to the sole of the foot, rose no higher than 85, five degrees less than at first.

A disagreeable sensation of cold was experienced, and particularly in those parts not supplied with large vessels, and out of the course of the great arteries. The body remained unpleasantly chilly till breakfast had been taken, and then a slight degree of pyrexia was perceived; the heat of surface being increased, the pulse quickened, and the mouth slightly parched. After breakfast the thermometer was applied to both hypochondriac regions, and the left was found one degree higher than the right.

To ascertain the temperature of different parts of the surface beneath the integuments, the bulb of a thermometer was introduced through small incisions about half an inch between the skin and subjacent parts of a lamb just dead. The heat of the rectum was first ascertained, as a means of marking the rate of cooling, and the different parts were then tried in the following order:

Venous blood in the jugular vein	105·5
Arterial blood from the carotid artery	107
Rectum	105·5
Over the metatarsal bone	97
Over the tarsal bone	90
Over the knee joint	102
About the head of the thigh	103
At the groin	104

Nearly a quarter of an hour had been occupied in making these observations, and the temperature of the rectum was now found to be 105. The three great cavities were next opened in the order enumerated.

Near the lower part of the liver	106
The substance of the liver	106.5
The substance of the lung	106.5
The left ventricle	107
The right ventricle	106
The central substance of the brain	104
Rectum	104.5

Surprised at the temperature of the brain being lower than that of the rectum, I was led to repeat the experiment. It may be proper to notice a few of the results, as it is a curious circumstance which they confirm. The four experiments I shall mention were made on lambs. As soon as the animal was dead, the cranium was perforated, and a delicate thermometer introduced into the central part of the brain.

1. Brain	104	Rectum	104.75
2. Brain	104.75	Rectum	105.5
3. Brain	105.5	Rectum	106.5

4. Posterior part of the brain, 105.5; anterior, 103; Rectum, 106.5.

The temperature of the air at the time was 68. Different parts of the brain were found to vary considerably in temperature; the anterior, as already noticed, being lower than the posterior, and the superficial, than the deep-seated parts.

REMARKS AND CONCLUSIONS.

That there is no material difference between venous and arterial blood, in respect to specific caloric, excepting what arises from difference of specific gravity; that the temperature of arterial blood is higher than that of venous; and the temperature of the left side of the heart, than that of the right; and lastly, that the temperature of parts diminishes as the distance of the parts from the heart increases—are the general results of the preceding experiments.

Admitting the accuracy of these experiments, and I think that they will be found correct when repeated, what are their consequences in a theoretical point of view?

They are evidently in direct opposition to Dr. Crawford's hypothesis; the essence of which is, that the capacity of arterial blood for heat is greater than that of venous, that there is no difference of temperature between the two ventricles of the heart, and, in fact, that the heat of all parts is nearly the same.

They are more agreeable to, and indeed they even support, the hypothesis of Dr. Black, that animal heat is produced in the lungs, and distributed over the whole system by means of the arterial blood.

Neither are they inconsistent with that hypothesis which considers the production of animal heat as dependent on the energy of the nervous system, and arising from all the vital actions constantly occurring.

Besides the results of the preceding experiments, many arguments may be advanced in opposition to Dr. Crawford's hypothesis.

As we never perceive a difference of capacity in bodies without a difference of form or composition; and as very slight differences of the former result only from great changes of the latter; it might be expected *a priori*, as no difference excepting that of colour has been detected between venous and arterial blood, that their specific caloric would be very similar. From analogy also, it might have been expected that the capacity of arterial blood for heat would be much less than that of water, as water appears to exceed almost every other fluid, and as the capacity appears to diminish as the inflammability of compounds increases. But the strongest arguments against this hypothesis are to be derived from the recent experiments of Mr. Brodie, and those of MM. Delaroche and Berard.

Dr. Black's hypothesis appears to me far more satisfactory than Dr. Crawford's, and capable of explaining a much greater

number of phœnomena; but there are objections even to this hypothesis, which must be removed before it can with propriety be received.

The last hypothesis which I mentioned, that which refers animal heat to vital action, has many facts in its support, and especially the results of Mr. Brodie's curious and interesting experiments; and the results of my inquiry, as I have already observed, are not incompatible with it. It may be said, that the viscera of the thorax and abdomen are of highest temperature, because these parts are, as it were, the elaboratories of life; and that the heat of the arterial blood, and of the parts best supplied with this fluid, is greatest, because they lie deepest and abound most in the principle of life or vital action. This explanation was suggested to me by my brother Sir H. Davy. There are some facts which I have observed agreeable to it, but not more so than to the hypothesis of Dr. Black. I have found the stomach of the ox, the pyloric compartment, of a higher temperature than the left ventricle itself: thus, when the latter immediately after death was 103, the former full of food was 104.5. I have also found the temperature of young animals, in whom all the vital actions are most energetic, higher than that of animals arrived at maturity. I may mention here, in illustration of this statement, a few observations made on infants, as I am not acquainted with any yet published. In one instance I found the heat under the axilla of a child just born 98.5; after twelve hours, 99; and after three days, the same; during the whole of which time it appeared in perfect health. On five other children of the same age, similar observations were made. In two instances of weak infants, the temperature, one hour after birth, was found not to exceed 96, which is two degrees below the standard heat of man in a state of health; but their respiration was still languid, and the next day the heat of the axilla had risen in one to 98.5, and in the other to 99.

To conclude: As in each hypothesis examined difficulties are found to exist from facts or the results of experiments of an unbending nature, we must at present either suspend theory altogether and search for *experimenta crucis*, or adopt that hypothesis which is conformable to the greater number of facts. The first measure is certainly the most philosophical; but to the latter we are naturally most inclined; and if I were questioned which view is preferable, I should make no hesitation in selecting Dr. Black's, which to me appears both most simple and most satisfactory.

PART IV.

FOREIGN MEDICAL SCIENCE AND LITERATURE.

PHYSIOLOGY, SURGERY, AND PRACTICE OF MEDICINE.

I.—In *Germany*, notwithstanding the extraordinary predilection in favour of animal magnetism seems rather to increase, medical science, in other respects, is assuming a more rational form. The following is an extract of a communication from our medical correspondent in that quarter. "Animal magnetism appears to be held in no great value in England. In Germany some remarkable cures of nervous affections, by Wolfart, Hufeland, and others, have considerably advanced its reputation. One cure in particular, performed by Wolfart, in presence of the first physicians in Berlin, has excited the attention of the faculty; and deserves to be made known. The patient was a woman, who had long laboured under a nervous disease, attended with uterine hæmorrhagy. I have myself witnessed its effects in the cure of catalepsy, in a girl at Hamburgh, which had defied all other remedies. About a year and a half ago, this subject was regarded of so much importance by the Prussian government, both as an object of science and of general benefit, that a commission was appointed at Berlin, under the direction of Hufeland, counsellor of state, to investigate its merits, consisting of the following members: Professors Graefe, Erman, Horn, Hufeland junior, Kluge, Roenen, Rudolphi, and Wolfart.

"Typhus having raged with violence in Germany during 1813 and part of 1814, several essays on the mode of treating it have been published; the best of which is by Prof. Horn, Director of the Charity Hospital in Berlin. Hufeland also, in the last number of his Journal, has made some remarks on this subject, which merit attention. Regarding the method of cure, the following observations are drawn partly from his own experience, partly from that of other practitioners. 'The most 'efficacious means,' says he, 'which can be employed for the 'cure of typhus are exposure to cool and pure air, the external 'and internal exhibition of cold water, and cleanliness; experience having proved, that, the warmer the patients are kept, 'the more violent is the disease. It was remarkable how rapidly the mortality diminished during the removal of whole

'hospitals, even in the worst weather, notwithstanding the unavoidable privations to which the patients were exposed: many of whom, under the most dangerous symptoms, recovered, who would certainly have perished in stationary hospitals. This favourable result was evidently owing to a continued change of air, and exposure to a cool temperature. Nearly the same effects were observable in hospitals through which constant strong currents of air were permitted to pass, as in the Charity Hospital of Berlin. Cold water was employed with the most beneficial effects in three ways. First, as a topical application applied on the head, when the brain was supposed to be the chief seat of suffering; and on the belly, in inflammatory states of the abdominal viscera, even when this state was attended with putrid diarrhœa. Snow and ice were occasionally substituted for water, with the same advantageous results. Second, as a general external application, by washing the whole body with cold water and vinegar; a practice which contributed much to keep down the violence of the fever, by exciting the skin, and hastening the crisis by perspiration. This mode of applying cold water was unadviseable in critical perspirations only; for in clammy or watery sweats, it was found to be as useful as in a hot dry state of the skin. Third, sprinkling and the shower-bath, which were without doubt the most powerful modes of applying water, and productive of the most wonderful effects.

"'These methods, however, required great care in their application and previous preparation; but when due precautions were taken, it was better to employ them without other medicines, than the best medicines in general use without them.'

"Muriate of gold, *aurum muriaticum*, recommended by Dr. Chretien of Montpellier, for the cure of syphilis, has been used in Hamburgh and in Berlin, with the greatest benefit*. The following is the method of employing it. One grain of the muriate and twenty grains of liquorice powder are carefully mixed together, and divided into twelve equal parts; one of which must be rubbed upon the tongue every morning; care being taken to avoid cold, and to refrain from acids.

"*Metallic quicksilver* has been lately much employed in Hamburgh in ileus. The opinion is, that it undergoes partial oxidizement, a greenish powder having been observed attached to it after it has been passed by stool.

"*Rhus Toxicodendron*, in the form of tincture, has been successfully administered in cramp of the stomach. The dose is

* For the method of preparing *Aurum Muriaticum*, see *Annales Cliniques de Montpellier*, Avril, 1811.

at first five drops several times a day; but it may be gradually augmented. In cramps also of the thorax, and in the suffocating dyspnœa attending hydrothorax, the *extractum lactucæ virosæ*, in doses of from one to two grains, has been found to be extremely serviceable."

II.—The following mode of destroying nasal polypus, is described in a posthumous work of *Augustus Gottlieb Richter*, edited by his son.

The polypus was such that it could not be removed either by ligature or the forceps. It had been frequently touched with caustic; but the part destroyed was as frequently reproduced: by degrees the anterior portion hardened, and enlarged, so that at length it was impossible to introduce an instrument into the nasal cavity. The protruding portion had now also become so tender, that the smallest irritating cause produced obstinate hæmorrhagy; and at the same time the general health of the patient was affected, hectic fever supervened, and the legs began to swell. Richter made a final attempt to extract the polypus; but it was productive only of a hæmorrhagy, which had nearly proved fatal to the patient: the following method of destroying it was therefore adopted.

A slender trocar was selected, the canula of which, however, was large, and extended one half only over the stilette, being furnished at its anterior part with a ledge, by which it could be retained in its place. Having enveloped the canula in moistened linen, it was fixed, resting upon the polypus and lower margin of the nostril, and then surrounded with wet lint. The stilette was next made red hot, and plunged through the canula, until it penetrated two inches into the substance of the polypus, which quickly inflamed, and for some days was extremely painful, with an increase of fever. Suppuration soon ensued; and this state being kept up by injections, the polypus gradually shrunk, and in a few weeks became sufficiently small to admit the forceps to be introduced, when it was extracted in the usual method. The hæmorrhage which followed was very trifling.

III.—On the 19th of January 1812, a Clinical Institution was established at Vienna for the cure of diseases of the eyes, under the management of *M. Beer*. Besides those who are taken into the hospital, out-patients daily attend. For the instruction of pupils, the number of which already exceeds 70, the history of every case, with observations on its treatment, is kept in a book deposited in a library of the Institution; which may be said to be purely ophthalmic, and contains almost every work which has been published on diseases of the eye. The following is a table of the cases which have been treated in this hospital from its commencement till the 27th August 1813.

Character of the Diseases at the Admission of the Patients.

1. IN-PATIENTS.	Number of Patients.
Idiopathic Ophthalmia	1
Idiopathic Ophthalmia with abscess of the cornea	1
Ophthalmia from wounds	2
Hypopion from wounds	2
Erysipelatous Ophthalmia	2
Pustular Erysipelas over both eyes and the whole of the face	1
Blennorrhœal Ophthalmia	1
Inflammation of the lachrymal glands	1
Fistula lachrymalis	1
Rheumatic Ophthalmia	3
Extensive ulcer penetrating the cornea, the consequence of a neglected rheumatic Ophthalmia	1
Rheumato-catarrhal Ophthalmia with ulceration of the cornea	6
Chronic rheumatic Ophthalmia with a cataract in the right eye	1
Rheumato-arthritic Ophthalmia	4
Rheumato-syphilitic Ophthalmia	2
Extensive abscess of the cornea, the consequence of neglected syphilitic Ophthalmia	1
Rheumato-scrophulous Ophthalmia with ulceration of the cornea	5
Arthritic inflammation of the iris	2
Syphilitic inflammation of the iris	3
Syphilitic inflammation of the iris, with abscess in the iris	1
Syphilito-arthritic Ophthalmia	2
Syphilito-scrophulous Ophthalmia	1
Scrophulous Ophthalmia with ulceration of the cornea	4
Scrophulous Ophthalmia with a cyst	3
Complete closure of the pupil of the left eye, and cataract in the right	1
Complete closure of the pupil, and other desperate cases, in which some operation might still be attempted	5
Complete cataracts	16
Arthritic amaurosis in an early stage	1
Complete paralytic amaurosis of both eyes	1
Paralysis of the upper eyelid with slight amaurosis	1
Cancerous tumours *(krebsknotchen, papula rebellis)* in the inferior lachrymal canal of the left eye	1
Total	77

2. OUT-PATIENTS.	
Ophthalmia from wounds	3
Ophthalmia of the eye-lids, with an erysipelatous character	4
Blennorrhœal Ophthalmia	4
Pus collected in the lachrymal sac	1
True complicated fistula lachrymalis	1
False fistula lachrymalis	1
Blennorrhœa of the lachrymal sac	1
Catarrhal inflammation of the tarsal glands	1
Rheumatic Ophthalmia	4
Rheumatic inflammation of the iris	1

Ulcer penetrating the cornea, the consequence of a neglected rheumatic Ophthalmia	1
Rheumato-catarrhal Ophthalmia	3
Rheumato-scrophulous Ophthalmia	2
Syphilitic inflammation of the iris	1
Scrophulous inflammation of the tarsal glands	2
Scrophulous Ophthalmia with ulcers of the cornea	10
Scrophulous Blennorrhœa of the eye-lids	1
Scrophulous eating ulcers of the cornea	2
Scrophulous inflammation of the lachrymal sac.	1
Spongy Exophthalmia	1
Hemophthalmia from wounds	2
Ecchymosis of the eye from wounds	1
Cataracts from wounds	3
Eating ectropion of the upper eye-lid	2
Hardening of the eye-lids, *(Augenlieder schwielen)*	1
Styes	2
Film *(sternie)* of the cornea	1
Complete staphyloma	1
Staphyloma commencing in the uvea	1
Abscess of the cornea, with total destruction of the organization of the uvea	1
Dropsy of the lachrymal sac	1
Glaucoma, or green cataract	1
Complete opacity of the vitreous humour	1
Slight amaurosis	1
Complete arthritic amaurosis	1
Hydrophthalmia	2
Fatty tumour on the upper eye-lid	1
Total	65

Recapitulation	In-patients	77
	Out-patients	65
	Total	142

Of these 100 have been completely cured; 10 discharged as incurable; 2 left the hospital before they were cured; 2 were passing strangers; 5 were incurable cases of very rare occurrence; and 23 discontinued their attendance at the hospital.

Of these 142 cases, 37 were operated on; 28 successfully, and 9 unsuccessfully with a more or less unfavourable result. It should, however, be stated, that of these nine, six were incurable; and that the operations were attempted more as experiments to note what could be effected by art, than with any expectation of success. Seventeen cataracts were removed by extraction, 14 with complete success, and 3 with a less favourable termination; three were depressed, one of which only was completely absorbed; and one by *keratonyxis* (in the full meaning of the term), with most perfect success.

IV.—Fractures of bones, in a state of disease, produced by the action of the muscles, have been frequently observed; but

that such a circumstance can happen in a sound bone, has been much doubted. Some cases, however, have been recorded; and the following, lately published by *M. Beauchene* *, one of the surgeons of the Hospital Saint-Antoine, in Paris, may be regarded as a well authenticated fact in support of the possibility of such an event.

" *Antoine Perrier*, thirty-four years of age, of a sanguino-lymphatic temperament, the driver of a fiacre, who had always enjoyed uninterrupted good health, slipped upon the ice, on the 30th of December 1811, whilst cracking his whip in pursuit of a pig. He made a powerful effort to prevent himself from falling; for the whole weight of the body, augmented by the suddenness of the stumble, would have thrown him on his back, if a violent and sudden contraction of the anterior muscles of the thighs, and particularly of the triceps femoris, had not first fixed the thighs, and afterwards enabled the other muscles of the anterior part of the trunk to preserve his equilibrium. During this effort a crack was suddenly heard, referable to the top of the right thigh, which was fractured, and *Perrier* found he could not walk, although he did not fall either before or after the accident. A surgeon was called, who immediately recognized the fracture; but would not credit the recital of the patient.

" The next day, December the 31st, this man was brought to the Hospital Saint-Antoine. The swelling round the joint was considerable; and a grating of the fractured parts of the bone was perceptible, on applying even slight pressure below the great trochanter. The application of proper bandages, &c. relieved the patient.

" Five or six days afterwards the bandages which had been deranged, were re-applied in the presence of many surgeons, all of whom regarding the existence of the fracture. A large ecchymosis was just beginning to be resolved: nevertheless the patient persisted in his assertion that he had not fallen, and his relation was confirmed by several eye witnesses.

" The treatment presented nothing remarkable. The dressings were removed, for the second time, forty-five days after their application; when no sensible shortening of the limb was perceived, although the place of the fracture could be readily recognized both by the sight, and to the touch.

" It is evident that in this accident, the head and neck of the thigh bone being in some degree united with the trunk, not only by the capsule of the articulation, but also by the contraction of the muscles, which, proceeding from the pelvis, are inserted into the trochanters; the superior part of the femor

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* *Journal de Medecine, Chirurg. &c.* tome xxx. p. 336.

was consequently placed between two powers, the one of which, represented by the entire weight of the trunk, tended to throw the individual on his back; whilst on the other hand this was opposed by violent contraction of the triceps femoris. What was the consequence? The cohesion of the filaments of the former having been overcome by the two forces acting in opposite directions, the fracture was produced."

V.—In a case of severe cephalagia, *moxa* was applied upon the cranium by *M. Bodson*, of Paris, with the happiest effects. As soon as the fire reached the skin, the pain began to dissipate, an abundant sweat broke out over the whole head, and the disease was effectually removed. The following were the symptoms of the attack: The seat of pain was at the bottom of the left orbit, stretching towards the temple and the crown of the head; the eyelids were closed, and the conjunctiva suffused. There was a sensation of strong pulsation in the part; and pressure was insupportable:—but the pulse at the wrist was slow, and the extremities cold*.

The same remedy has been employed by Dr. *J. A. Saissy*, at Montpellier, in several cases, which he terms, *phthisie pulmonaire confirmée*. One of the cases which was said to have proceeded from a repelled itch, in a patient seventeen years of age, was attended with the following symptoms: Extreme debility, frequent and obstinate cough, attended with viscid and purulent expectoration, great difficulty of respiration on the slightest accelerated motion; slow fever, with evening exacerbations; clammy night sweats; the nails of the fingers bent inwards; and acute pain at the middle of the sternum and between the shoulders. The moxa was applied upon the sternum, after vesicatories, inoculation for the itch, and other remedies had proved useless. An hour after its application, an access of fever ensued, at the termination of which the patient fell into a long and profound sleep, which was as it were the prelude to returning health. The hectic fever disappeared, the expectorated matter was soon no longer streaked with pus, and all the other symptoms so rapidly yielded, that in three weeks the patient was apparently well†.

VI.—*Rupture of Uterus.*—A singular case is detailed by *M. Gaulay*, which occurred in a free mulatoe woman, in Martinique. She had borne one child before. At seven months and a half, symptoms of premature labour came on; she was

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* *Journ. de Med.* t. xxx. p. 107—11.

† *Annales Cliniques de Montpellier.* Novembre, 1813.

attended by a negress, who, finding that matters were not going on well, left her to her fate. After a violent pain, as if her entrails were torn out, she suddenly became easy; by degrees the abdomen began to diminish, symptoms of fever, with emaciation, came on, and in three months a piece of bone was protruded per anum; means were then taken to extricate the remainder, when the following, by degrees, were extracted; some by the woman herself, others by M. Gaulay:—many portions of vertebræ, some phalanges of the fingers, the os cocygis —sternum, a clavicle, a portion of a cervical, a temporal and spenoidal bone—two parietal bones—temporal and upper jaw bones—an ethmoid bone—part of the lower jaw—several ribs—phalanges, and a femur. Six months afterwards she remained in excellent health, and five years afterwards again conceived.

M. Gaulay gives the following reasons for thinking that this was rupture:—the woman was regular the two first months only of her pregnancy—was sick, and vomited daily—felt the fœtus in the uterus as in her first child—had regular pains for its expulsion—the lochia came on—and there was secretion of milk.

If these observations be correct, it establishes a fact, that rupture of the uterus is not necessarily fatal*.

CHEMISTRY.

VII.—M. Haldat has analysed the lymph contained in the ventricles of the brain†.—He found that it was not coagulable by heat, acids, or alcohol; a property by which it differed from that found in the abdomen and thorax. "This lymph," says he, "when pure, is perfectly colourless and inodorous; its taste is sensibly saltish (muriatique); its specific gravity scarcely differing from that of common water: it is not viscid; and froths very feebly where agitated with air.

"Three decagrammes and five decigrammes of this fluid evaporated to dryness, yielded a residue which weighed four decigrammes twenty-five centigrammes; of a brown colour, and scarcely capable of being dried.

"This lymph does not change the colour of infusions of violets and mallows. It is not affected by sulphuric, nitric, and muriatic acids, when they are not in a concentrated state. The oxymuriate of mercury renders it turbid, and produces a white precipitate. With nitrate of silver it forms a white, clotted coagulum, which becomes quickly brown, when exposed to the light. The decoction of galls separates from it yellow-coloured floculi. Oxalic acid gives it an opaline hue,

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* *Journ. Med.* tome xxx. p. 140—149.

† See *Bulletin de la Faculté de Medecine de Paris,* No. vi. 1814.

which is succeeded by a light precipitate. Finally, lime water renders it turbid, and disengages very sensibly an ammoniacal odour."

From these experiments, and several others of an analagous description, M. Haldat concludes that 100 parts of this lymph *(lymph encephalique)* contain

Water.....	96	5	Gelatin.....	0	9
Muriate of soda...	1	5	Phosphate of soda, an in-		
Albumen.....	0	6	determinate quantity.		
Mucus.....	0	3	Phosphate of lime.		

Notwithstanding the ammoniacal odour, extricated by lime water, no ammoniacal salt is enumerated among these products, a circumstance which M. Deyeux, who presented the account of this analysis to the Faculty of Paris, justly observes, tends to weaken our confidence in the analysis of M. Haldat.

The author notices, as a remarkable fact, that the relative quality and quantities of these products establishes an analogy betwixt this lymph and that produced by *spina bifida*, examined by Dr. Bostock; and therefore concludes that these two fluids have a similar origin. The greater quantity of gelatin which these lymphs contain, induces M. Haldat to propose naming them gelatino-mucous lymphs, while the simple term lymph is employed to designate the other animal fluids of this description.

"If," says M. Deyeux, "these propositions be adopted, we must admit the existence of three fluids destined to guard from friction the external surfaces of organs: viz.

"1. The albuminous lymph of cavities lined by serous membranes, such as the peritoneum, the pleura, the pericardium; that of the cavity of the tunica vaginalis of the testicle, and the hollows of the cellular tissue. Albumen and soda predominate in this lymph.

"2. The defending varnish of surfaces lined by mucous membranes, such as the air passages, the urinary and the generative organs. Animal mucus and muriate of soda abound in this species of varnish.

"3. The fluid which moistens the membranous coverings of the encephalon and the spinal marrow, in which muriate of soda and gelatin may be said to be in excess."

On these observations of *M. Haldat*, M. Deyeux properly remarks, that although they deserve attention, yet we cannot regard the results of a single analysis conclusive, particularly as we are ignorant whether the fluid of the ventricles be not altered by age, sex, constitution, and other circumstances.

VIII.—*M. Sizaire Violet* has published a very interesting

Essay on the Baths and Mineral Waters of Rennes*. This essay enters fully into the history, topography, chemical analysis, and medicinal properties of these celebrated waters; and, were it consistent with the general plan and the limits of our publication, we should willingly present our readers with a literal translation of it: but as this cannot be done, we shall endeavour to give such an abridgment of it, as shall display all the more interesting particulars.

The village of Rennes, in the department of the Aude, is situated in a beautiful valley, formed by a part of the chain of mountains known by the name of *Hautes Corbieres*, and adjoining the Pyrennees. The baths have been in repute from time immemorial; and, from the characters of the antiquities and coins which have been found near them, it is probable that they were much resorted to by the Romans. The neighbouring mountains contain mines of iron and copper; and at the same time traces of sulphate and sulphuret of iron, and sulphuret of lead, have been discovered. The soil is chiefly argillaceous and calcareous, and the climate mild and temperate. There are three hot springs, one of which is bituminous, and two sulphureous; and two cold springs, the one saline, the other chalybeate.

The hot baths are named—1. The Queen's bath—*bain de la reine;* 2. The temperate bath—*bain doux ou tempéré;* 3. The strong bath—*bain fort.* The saline cold bath is named, *Source du pont;* the ferrugineous, *Source du cercle.*

1. The *Bain de la Reine*, the coolest of the warm springs, is situated on the left bank of the river Salz, about five hundred paces from the village of Rennes. The water, which is received in a large open basin, and distributed by tubes to nine different baths, is clear, inodorous, and colourless; it readily dissolves soap, is unctuous to the feel, and renders the skin soft and smooth, but has an austere taste. The temperature of the water at its source is 34° Reaum. (108.5 Fah.); in the basin or reservoir, 33° (106.25 Fah.); and in the baths, 32° (104 Fah.): its specific gravity is 11° measured by the instrument of Ressa.

The water of the *Bain de la Reine* does not change vegetable blues. Ammoniacal gas throws down a floculent; and lime water, a white precipitate: sulphuric acid added to it, produces no sensible effervescence, but after forty-eight hours, a light

* We are uncertain whether this Essay has appeared in any other work than the *Bibliothéque Médicale*, a publication little known in this country; but which we regard as the best of the French Medical Journals.

white precipitate is observed. The following are the constituents of this water, the quantity analysed being forty kilogrammes* :

	gram†.		gram.	decig‡.
Muriate of magnesia	10	Carbonate of magnesia	9	0
——— lime	5	——— lime	4	0
——— soda	12	——— iron	3	5
Sulphate of magnesia	3	Loss	0	5
——— lime	13			
		Total solid contents	60	0

2. The water of the *Bain doux* rises close to the road from Allet; is received into three large basins, and renewed twice a day; one of them is appropriated to women, the two other to men; each being large enough for twelve or fifteen persons. This water slightly reddens vegetable blues; ammoniacal gas, lime water, and sulphuric acid produce the same effects as on the water of the Queen's bath; oxalic acid renders it turbid, and throws down a copious precipitate. If oxy-muriatic acid be added to the water of this bath, and the phial containing the mixture corked, after remaining at rest for an hour, on taking out the cork, the atmospherical air is absorbed with great force and rapidity. Forty kilogrammes of the water contain

	gram.		gram.	decig.
Sulphuretted hydrogen gas		Sulphate of lime	2	5
Muriate of lime	23	Carbonate of lime	2	2
——— magnesia	5	——— magnesia	0	8
——— soda	8	——— iron	3	0
Sulphate of magnesia	11	Loss	5	0
		Total solid contents	60	5

3. The *Bain fort* is situated in the centre of the village. Its water, which rises on the bank of the river Salz, and is conducted into a small basin, reddens the vegetable blues, and produces, with ammoniacal gas, lime water, and sulphuric acids, effects similar to those already noticed. This bath has a very high temperature, which prevents it from retaining the carbonic acid it naturally holds in solution; and which may be collected from it by a mercurial pneumatic apparatus. Forty kilo-

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* One kilogramme is equal to 15444·0234 grains troy.

† One gramme ..... 15·4440 ———

‡ One decigramme ..... 1·5444 ———

grammes of it contain, besides two cubic decigrammes of carbonic acid,

	gram.		gram.	decig.
Muriate of magnesia	24	Carbonate of magnesia	9	5
—— of lime	5	—— of lime	8	2
—— of soda	2	—— of iron	4	5
Sulphate of magnesia	5	Siliceous matter	0	3
—— of lime	9	Loss	0	5
Total solid contents			68	0

4. The *Source du Cercle* rises about 300 metres * above the Salz, in a south-east direction, and 550 metres from the Strong bath, near the hamlet named Cercle. It trickles from the base of a huge rock; and, after winding for some distance among sharp broken rocks, it forms a small reservoir, from which it again issues. The temperature of this water is 12° Reaum. (59 Fah.): at its source it contains free carbonic acid, and, consequently, reddens deeply the vegetable blues. Ammoniacal gas with an excess of ammonia, forms in it a yellow precipitate; prussiate of lime strikes a beautiful blue colour; and ammonia in excess throws down a brownish precipitate, demonstrating the presence of sulphate of lime: potass, oxalate of ammonia, and the oxalic and sulphuric acids indicate lime; and tincture of galls, the presence of iron. Forty kilogrammes yield,

	gram.	decig.		gram.	decig.
Muriate of magnesia	5	0	Oxysulphate of iron	2	0
—— of lime	2	5	Carbonate of magnesia	3	0
—— of soda	7	0	—— of lime	3	0
Sulphate of magnesia	3	5	—— of iron	3	0
—— of lime	4	5	Loss	0	5
Total solid contents				34	0

5. The *Source du Pont*, which rises on the left bank of the Salz about 100 metres in a northern direction from the Queen's bath, is more distant from Rennes than the other cold spring, but is more used. It does not change the vegetable blues; although ammoniacal gas, lime water, and concentrated sulphuric acid produce the same effect on it as on the other waters. Fifteen kilogrammes contain

Muriate of lime	1	0	Carbonate of magnesia	1	3
—— of magnesia	1	0	—— of lime	0	5
—— of soda	1	0	—— of iron	1	0
Sulphate of magnesia	1	5	Loss	0	2
—— of lime	0	5			
Total solid contents				8	0

* A metre is equal to 3 feet 3.371 inches English.

Medicinal properties of the baths and waters of Rennes.—From four to five thousand persons resort annually to the baths and springs of Rennes, between the months of June and November. The *Bain de la Reine*, says M. Violet, being bituminous and saponaceous, calming and antispasmodic, is found useful in nervous and spasmodic affections, enlargements of the lymphatic glands, and visceral obstructions. The patients, however, after using them for some time, generally have recourse to the ferrugineous water of Cercle, to perfect their cure. The *Bain doux* is sulphureous, and consequently employed in cutaneous diseases: but it has been found extremely efficacious also in chronic rheumatism, and rigidities arising from fractures and sprains. The *Bain fort* is tonic and stimulant, and is considered particularly serviceable for dissipating those swellings and indolent tumours, which often appear in debilitated habits, particularly after acute disease; in paralysis; and in chronic rheumatic affections, which resist the temperate bath. This water is also employed as a *douche*, in which form it has been found particularly useful in indolent tumours, gout, anchylosis, and contractions. The water of the *Source du Cercle* is less ferrugineous than the water of Spa, but more laxative, owing to the muriate of soda which it contains. It is tonic and deobstruent, and therefore recommended in chlorosis, and dyspeptic affections. It is occasionally diluted with milk, or barley-water. The *Source du pont* is saline and laxative; purging gently, without griping; and is, therefore, much resorted to. It is found to be particularly useful in habitual costiveness, and indigestion accompanied with eructations and borborygmy; and in hypochondriac and bilious affections. M. Violet recommends this water to be taken, for a short time, previous to the use of that of the *Source du Cercle*.

IX.—*Chemical Re-agents.* Professor Pfaff, of Kiel, has ascertained that the best mode of detecting corrosive sublimate in solution, is to put into the solution suspected to contain the salt, a small piece of clean copper coin; which, if corrosive sublimate be present, will be covered with a white coating, or white streaks which acquire a metallic lustre when rubbed. This test, according to M. Pfaff, is able to detect the presence of $\frac{1}{170}$ of a grain of corrosive sublimate, when dissolved in 20,000 times its weight of water.

Mr. Meyer, of Stettin, has proved that nitrate of silver is capable of detecting one part of muriatic acid, dissolved (in the state of common salt) in 113,832,000-parts of water.

X.—The following are the results of an analysis of *conium maculatum*, by Schrader. 1000 grains of the plant yielded,

Extractive	27·3	Albumen	3·1
Gummy extract	35·2	Green fecula	1
Resin	1·5		

The same quantity of the plant yielded the following salts:

Phosphate of lime	46	Carbonate of potass	115·0
——— magnesia	30·1	Sulphate of potass	10·8
Carbonate of lime	27·4	Muriate of potass	4·2
——— magnesia	20·2		

BOTANY.

XI.—*Continuation of Koelreuter's Dissertation on the Form of the Anther Powder of Plants, (from* Repository, *vol. ii. p.* 430.)

Oval, and partly meloniform.

Callitriche *verna*
Syringa *persica*
Lycopus *europæus*
Monarda *fistulosa*
——— *didyma*
——— *punctata* * *
Salvia *Horminum* * *
——— *pratensis* * *
——— *verticillata* * *
——— *glutinosa* * *
——— *canariensis* * *
——— *Sclarea* * *
——— *formosa* * *
Anthoxanthum *odoratum*
Valeriana *rubra*
——— *calcitrapa*
——— *Cornucopiæ*
——— *Locusta*
Ixia *chinensis*
Iris *Xiphium*
Globularia *nudicaulis*
Asperula *odorata*
——— *arvensis*
Galium *sylvaticum*
Mollugo
——— *Aparine*
Tournefortia *sibirica*
Primula *veris*. α et β
——— *Auricula*
Convolvulus *arvensis*
——— *canariensis*
——— *althæoides*
Nerium *Oleander*
Gentiana *Pneumonanthe*
——— *verna*
Statice *Armeria*
——— *Limonium*
——— *sinuata*
Linum *maritimum*
Crassula *coccinea*
Myosurus *minimus*
Acorus *Calamus*
Prinos *verticillatus*
Tiarella *cordifolia*
Arenaria *rubra*
Euphorbia *exigua*. α
——— *helioscopia* * *
Mesembryanth. *filamentos*
——— *bicolor*
——— *expansum*
——— *tortuosum*
Spiræa *Filipendula*
Argemone *mexicana*
Aquilegia *vulgaris*
——— *canadensis*
Trollius *europæus*
Satureja *hortensis* * *
Mentha *rotundifol* * *
——— *aquatica* * *
——— *gentilis* * *
——— *exigua* * *
——— *Pulegium* * *
Nepeta *Cataria* * *
Hyssopus *officinalis*
Marrubium *vulgare*
Phlomis *tuberosa*
Clinopodium *vulgare* * *
Origanum *vulgare* * *
——— *Majorana* * *
Thymus *Serpillum* * *
——— *vulgaris* * *
——— *Acinos* * *

Melissa *officinal* * *
—— *Calamintha* * *
Dracocephalum *canariense* * *
———— *Moldavica* * *
Scutellaria *minor*
Prunella *vulgaris*
Euphrasia *lutea*
Melampyrum *arvense*
———— *nemorosum*
———— *pratense*
———— *sylvaticum*
Linnæa *borealis*
Acanthus *mollis* * *
Cheiranthus *annuus*
Cleome *violacea*
Geranium *fulgidum*
——— *inquinans*
——— *vitifolium*
——— *zonale*
——— *capitatum*
——— *lobatum* α
——— *triste*
——— *cicutarium*
Coronilla *glauca*
Indigofera *psoraloid*
Artemisia *Absinthium*
——— *vulgaris*
Centaurea *Scabiosa*
Serapis *longifolia*
Grewia *occidentalis*
Calla *æthiopica*
Valantia *cruciata*
Chamaerops *humilis*
Nyctanthes *Sambac*
Jasminum *officinale*
——— *azoricum*
——— *odoratissimum*
Jasminum *fruticans*
Galium *uliginosum*
Rubia *tinctorum*
—— *peregrina*
Plumbago *zeylanica*
Rhamnus *Alaternus*
Ribes *rubrum*
— *Grossularia*
Achyranthes *aspera*
Linum *austriacum*
Polygonum *divaricatum*
———— *dumetorum*
Phytolacca *decandra*
Euphorbia *officinarum*
——— *Caput Medusæ*
Tetragonia *fruticosa*
Aizoon *canariense*
Spiræa *Ulmaria*
Actae *racemosa*
Cistus *populifolius*
—— *laurifolius*
Clematis *Viticella*
——— *Flammula*
Adonis *autumnalis*
Ranunculus *Ficaria*
Helleborus *niger*
Scutellaria *galericulata*
Euphrasia *Odontites*
Pedicularis *sylvatica*
Chelone *barbata*
Browallia *demissa*
Cochlearia *Armoracia*
Artemisia *Dracunculus*
Impatiens *Noli tangere*
Platanus *occidentalis*
Ricinus *communis*

(To be continued.)

PART V.

MEDICAL AND PHYSICAL INTELLIGENCE.

I.—LECTURES AND SOCIETIES.

LECTURE III.—*On the Analysis of Vegetable Substances, and on the Proximate Vegetable Principles.* By Professor BRANDE, at Apothecaries' Hall, London.

THERE are two roads by which we arrive at a knowledge of

the constitution of vegetable substances—the one is that which the older chemists usually pursued: it consists in subjecting the body under examination to a heat gradually augmented to redness. The balance of attraction among its ultimate elements is thus disturbed, and they either assume new arrangements and make their appearance in new compounds and under new forms, or they are developed in a separate state. If, for instance, I thus heat some resin, I shall obtain water, oil, an acid matter, a quantity of inflammable and some uninflammable air, and there will remain in the vessel to which the heat was applied, a portion of charcoal, and minute traces of saline and earthy matters. The earlier chemists, observing these changes, conceived that resin consisted of these various products; but this clearly is not so; they arise from certain elementary substances of the resin having assumed new forms, and thus producing oil, water, &c. This method of analysis, although leading to results often interesting, and sometimes useful and important, is almost superceded by the second to which I alluded, and which, instead of developing the *ultimate* component parts, teaches us the proportions and nature of the *proximate* principles of vegetables. It is thus that modern chemists have successfully investigated the nature and products of vegetables; that they have discovered the means of separating their inert or useless parts, from those which are efficacious, nutritious, or otherwise useful.

In pursuing this method, for instance, upon a piece of cinnamon bark, I should digest it first in water, which would acquire colour and taste; and by evaporating the water, I should obtain a brown sapid substance, called extract—If I distil the bark with water, it yields a portion of a fragrant essential oil—If I act upon it by spirit, some resinous matter is taken up which had resisted the action of water; and lastly, after the operation of such agents, there remains an inert woody fibre. So that instead of saying that the bark consists of water, oil, acid, charcoal, and so on, I should regard it as composed of inert ligneous fibres, containing extractive and resinous matter, and a fragrant essential, or volatile oil, to which its characteristic smell is to be attributed.

Chemistry has thus discovered, that the truly nutritive ingredients in vegetables are but few, although the varieties of vegetable products in which they exist, and which are consequently used as articles of food, are very numerous. Of vegetable nutriments, *starch*, *gluten*, *sugar*, and *gum*, are by far the most important. It is to these that the seeds, roots, and grasses, used for the food of man and other animals, owe their nutritive power; and although several other principles are combined with them, yet these are comparatively of little importance; they are mere seasoners of the chief aliment.

The analysis of wheaten flour, perhaps the most nutritive vegetable substance, is very easily performed, and will at once make us acquainted with two very essential vegetable substances, namely, *starch* and *gluten*.

These may be separated by washing wheaten flour upon a fine sieve. The starch is carried through, and gradually subsides; the gluten remains as a viscid elastic matter: or starch may be better procured by steeping coarsely bruised wheat in water for about three weeks, and then pressing it under water in a linen bag; the starch

thus is squeezed out from the gluten, and subsides, as an insipid white powder.

The chemical properties of starch are insolubility in cold water, but ready solubility in hot water, with which it forms an adhesive compound. It is insoluble in spirit of wine; and soluble in dilute acids, especially in dilute nitric acid.

Sago, salop, cassada, arrow-root, potatoes, either consist chiefly or entirely of *starch;* it is at once nutritive and of easy digestion.

Gluten has many properties analagous to animal matter; and when distilled, it yields ammonia. It probably is the most nutritive of all vegetable principles; and the superiority of wheat to other grain seems to depend upon its containing more gluten.

Gluten is insoluble in cold and in hot water; it is readily soluble in the dilute mineral, and in the vegetable acids. It is decomposed by concentrated sulphuric acid into acetous acid, ammonia, charcoal, and carburetted hydrogen; and by concentrated nitric acid, into malic and oxalic acids and ammonia.

A vegetable principle, nearly allied to gluten, is *albumen;* it differs chiefly in being more soluble in water. It is found abundantly in the sap of the houseleek, of the papas tree, in the juice of cabbages, &c. and is the principal reason of the fetor exhaled by these plants during their putrefaction. Their sap is in some respects analogous to the blood of the inferior insect tribes.

The production of bread depends upon the action of water upon the gluten and starch of wheat-flower, which produces, at a proper temperature, a peculiar species of fermentation, the changes of which have been chemically examined. When flour is made into a paste with water, and heated to between 4 or 500°, it increases in weight, and becomes insoluble, producing unleavened bread; but if the dough be suffered to ferment, or a little fermented dough or yeast be added to the bread before baking, it then ferments, carbonic acid is generated, and, when the bread is baked, it is lighter and more easy of digestion than unleavened bread. The superiority of wheaten over other leavened bread depends upon its containing more gluten, by which the carbonic acid gas is retained. In wheaten bread, about $\frac{1}{4}$ of the water used is consolidated.

About $\frac{1}{4}$ of the weight of the potatoe is nutritious matter.

1000 parts of turnips yield about 50 of nutritious matter—of carrots and parsnips, about 100.

The proportion of starch to gluten in wheat, is between 70 and 80, to 20 and 30 per cent.

The *wheat* of warm climates contains more gluten than that of colder. Hence the flour of Italy and the South of Europe is better adapted to making maccaroni and other glutinous compounds.

Barley contains 80 of starch, and only 6 to 8 of gluten.

Rye, in 100, 60 of starch and 5 of gluten. *Oats* about the same; the remainder is chiefly husk or inert matter.

Sugar is another important vegetable product; it contributes largely to the nutritious powers of many vegetables, and is also much employed in its pure state. It is rarely found in vegetables in a tolerably pure state, but generally mixed with mucilage, &c. Its chief sources are the juice or sap, as in the maple and cane; the ripe fruits, as dates, grapes, and figs; the roots, as beet, parsnip, &c.

The chemical history of the separation of sugar from the sugar cane, is described in Aikin's Dictionary. Sugar is nutritive (and antiseptic), and contributes to the agreeable flavour of several articles of food. It might be employed instead of salt in the preservation of meat; and, although not so efficacious in resisting putrefaction for a length of time, it produces less change in the animal muscle.

Maple-sugar is used in North America. It is obtained from the sap; each middling sized tree yielding by tapping about 200 pints of sap; and every 40 pints of sap afford about 1 pound of purified sugar.

Sugar of grapes and beet-sugar have been manufactured in France; but there is great difficulty in obtaining it in a white and solid form: it is therefore used in a liquid state, or syrup.

Manna, an exudation of the Fraxinus Ornus, is a species of sugar a good deal resembling that of grapes.

As the British market has been occasionally overstocked with sugar from the West-India islands, proposals have been made to fatten cattle with it, but the plan has never been carried into execution upon any extensive scale.

The chemical properties of sugar are solubility in water and in spirit of wine: it is also soluble without decomposition in very dilute acids. When acted upon by nitric acid, it affords about half its weight of pure oxalic acid.

The sugar of the cane crystallizes in flattened six-sided prisms.

Gum is another well-known and important vegetable product.

Gum Arabic, the produce of the acacia vera, may be taken as a specimen of pure gum; it is soluble in water, and the solution has little tendency to putrify or decompose. It is insoluble in spirit of wine. When decomposed by heat, it affords a portion of *vinegar,* which was formerly regarded as a peculiar acid called *pyromucous.* Gum is so nutritious, that in Africa thousands of the Moors are supported upon it during the harvest. Six ounces per day support a man: they also mix it with milk and broth, and take it in other vehicles. Its uses in pharmacy are numerous, and in the Arts it is used by calico-printers, to give consistency to their colours; to gloss ribands; and to give body to writing ink.

These are the chief nutritive principles of vegetables; and their importance as articles of food requires no comment. I shall have again to call your attention to them, when speaking of the effects of a vegetable diet; but this discussion cannot be entered on until the aliments derived from the animal kingdom have been dwelt upon, when I shall endeavour to draw a comparison between their respective effects, and to point out particularly those states of the constitution adapted to these two modes of nutrition.

The vegetable principles which rank as medicines, are extremely numerous; but chemistry furnishes us with but imperfect distinctions between them; and, as you will afterwards find, it is rather in their effects than in their characters that we are to look for the means of classing them. I can here only enumerate the *oils* and *resins*—*extractive matter*—and *astringent matter,* or *tan.*

Among the oils, some are obtained by expression, others by distillation. The former are usually bland, or tasteless, and without

smell. When heated they are decomposed, with the phenomena alluded to at the beginning of this Lecture. The latter are volatile; they are fragrant, and of an acrid flavour, and generally possessed in an eminent degree of the leading characters of the plant that affords them. Hence they are called essential oils. These two kinds of oil are both soluble in spirits of wine and ether; the former, generally speaking, less abundantly so than the latter. This is a circumstance not generally attended to: solubility in spirit is frequently pointed out as the characteristic of essential oils and insolubility of the fixed oils. The fixed oils unite with the caustic fixed alcalies, and form saponaceous compounds; the volatile oils do not.

The proportion of ingredients in the finer soaps is about 1 cwt. of alcali to 2 cwt. of oil, which yields $3\frac{1}{4}$ cwt. of soap; so that 12 parts of oil yield about 20 of soap. The volatile oils, on account of their high price, are frequently adulterated with fixed oils, or with alcohol, or both.

Expensive volatile oils may thus be adulterated with cheap fixed oils, and the mixture will still be soluble in spirit of wine. *Castor oil,* as being more readily soluble in spirit than other fixed oils, is generally used in these cases; and, to restore the sophisticated oil to its proper degree of fluidity, a farther addition of alcohol is not unfrequently made. Three parts of genuine oil of cloves, one of castor oil, and one of alcohol, are about the proportions of the adulterated oil. The fraud is not detected by spirit of wine, for it is easily soluble in that menstruum; but the adulterated oil leaves a greasy stain upon paper; whereas the genuine oil entirely evaporates when rubbed upon paper, and held before the fire.

The volatile oils are obtained usually by distillation; some few by expression; they, as well as fixed oils, are lighter than water; but oil of cloves, cinnamon, and allspice, sink in water, and are of a specific gravity of about 1020.

The volatile oils are soluble to a certain extent in water: hence the advantage in their distillation of employing the same water for fresh portions of the vegetable. In distilling oil of cinnamon, for instance, the whole produce in oil of the first cwt. will be dissolved in the water. The same water being poured upon a second cwt. will come over with the oil floating upon the water, and so on.

There is one of the essential oils of a very peculiar character, that obtained by distilling bitter almonds. One pound of bitter almonds afforded six drops of this oil—it is heavier than water—it is extremely poisonous—so much so, that if a probe be dipped into it, and the tongue of a small cat or dog touched with it, the animal almost instantly expires: it produces a similar effect when applied to a wound. For a series of experiments upon its modus operandi, I must refer to Mr. Brodie's papers in the Phil. Trans. for 1811 and 1812.

Camphor is a substance nearly allied to the volatile oils; in its chemical properties it agrees with them; it is obtained by distillation from the laurus camphora, a native of the eastern parts of Asia.

Medicinally speaking, the fixed oils are gentle aperients; the volatile oils are acrid, stimulating, and some of them possessed of very peculiar powers.

Resin is a term applied to a very abundant product of vegeta-

bles; they are mostly solid, heavier than water, insoluble in water, soluble in spirit of wine, and in this respect the converse of gum. As medicines, few only are important, but they are of great use in the Arts.

The *gum resins* are natural compounds of gum and resin, and partake of intermediate chemical properties. Of these many are important articles of the Materia Medica; such as *aloes, scammony, myrrh, gamboge, amoniac.* Some contain essential oil, such as *sagapenum, opoponax,* and *assafœtida.*

Balsams have the general character of resins; but when heated, they yield *benzoic acid.*

The term *extract,* chemically speaking, is extremely vague. In its pure state it is a brown sapid substance, soluble in water and alcohol, but insoluble in ether:—in the language of pharmacy it is applied to the solid matter obtained from the decoctions of plants; and often contains a variety of other principles—such as the *bitter, colouring, narcotic* principles, *astringent* principle or *tannin,* &c. The astringent principle is an article of much importance in medicine, as well as in the Arts. It is characterised by its peculiar taste, and by forming an insoluble precipitate or compound with animal jelly, as in the process of tanning the skins of animals.

The principles which I have now described, and which are formed during the process of vegetation, are found to vary at different periods of the growth of the vegetable; and in many instances are discovered passing and repassing into each other, a circumstance which the statement I made at the beginning of my Lecture may serve to explain; for, as I have endeavoured to shew, various and numerous as are the proximate principles of vegetables, their ultimate components are few, and variety results from their combination in various proportions. *Charcoal, hydrogen,* and *oxygen,* are the leading elements of vegetable matter; and these are variously united by the living powers of the plant. As instances of the transmutation of vegetable principles, we may notice the conversion of starch into sugar during the germination of seeds described in my last Lecture, and the converse takes places during the ripening of grain, in which sweet juice passes into the state of starch. Indeed, chemical analysis discovers but a trifling difference in the ultimate composition of sugar, gum, and starch; and these substances, during the process of vegetation, appear remarkably susceptible of passing into each other. Nor has Art been wholly unsuccessful in imitating some of these recondite natural operations. Kirchoff has succeeded in converting starch into sugar; and Mr. Cruickshank is stated to have obtained a substance like gum from sugar acted upon by phosphuret of lime: but the accuracy of these last results, I very much doubt. Finally, Mr. Hatchett has shewn that tan, on the astringent principle, is readily formed by acting upon carbonaceous substances by sulphuric or nitric acid. It is probable that the progress of chemistry, by enlarging our powers over matter, will enable us to exhibit other and more perfect imitations of natural processes. The tendency of such discoveries is to exalt our admiration of the powers of Nature, by displaying the unerring simplicity of her operations, and to furnish the means of benefiting and extending the useful and the fine arts.

Royal Society.—On Wednesday the 30th of November, the day of the anniversary election, the Copleyan medal was given to Mr. Ivory for his Mathematical Papers published in the Transactions.—On Thursday, December 15, part of a paper by Benjamin Travers, Esq. was read, on the Mechanism by which the Eye adjusts itself to different distances. The paper was drawn up with uncommon clearness, and even elegance. It consisted of three parts: 1. A sketch of the different hypotheses to which this mechanism has been ascribed, with the author's reasons for not admitting them. These are, the muscles of the eye, the ciliary processes, the supposed muscularity of the lens itself. 2. An account of the anatomy of the eye, as far as it is requisite for the purposes of the paper. 3. His reasons for believing that external pressure is applied to the lens, and that this pressure is sufficient to alter its shape.—On Thursday, 22d Dec. Mr. Travers's paper was continued. He gave his reasons for considering the iris as muscular, and that by means of it the pupil is adjusted to different distances.

Linnæan Society.—On Tuesday, December 6th, a paper by James Johnson, Esq. was read, giving an account of some fossil bones found in the cliff near Lyme, Dorsetshire. This cliff abounds in belemnites, nautili, and the remains of other sea animals. The bones in question have been supposed to belong to the crocodile; but Mr. Johnson gave his reasons for considering that opinion as ill founded. He thinks they constitute the bones of a new and unknown species of amphibious animal. He is of opinion that the animals whose remains are found here lived and died upon the spot. —A communication from Mr. Sowerby was also read, on the Spiral Tubes of some Fossil Shells belonging to the genus Anomia of Linnæus and Terrebratula of Lamark. These shells occur in limestone, and he thinks the spiral tubes will furnish characters sufficient to constitute them a new genus.

II.—MEDICAL.

Borax.—The Chinese employ this salt in inflammatory sore throat. They reduce the Borax to a fine powder, and blow it, through a reed, upon the inflamed surface.

Leeches.—Doctor *Clesius*, of Coblentz, in a work on the Medical Use of Leeches, asserts, that if a leech be cut through near the tail, whilst it is sucking, it will not quit its hold, but continue to suck for a considerable length of time. The knowledge of this fact is important; inasmuch as it enables us to obtain a large quantity of blood from parts on which many leeches could not be easily applied, and to make the most of this species of remedy when leeches are scarce, and, consequently, very expensive.

Medical Vibration.—*M. M. Rieflellen* and *Seidelin* of Copenhagen have invented a machine, by which vibration can be medically employed. It consists of several iron rods of different lengths, curved at one extremity and flattened at the other. The flat end of each rod is fixed into a solid pedestal; while the other, which is the upper extremity, surrounded with leather, impinges on a wooden cylinder which is moved by a wheel, and the vibration of the rods thus excited.

The vibratory motion is increased or diminished according to the length of the rods, by means of a cord attached to each; which, by bringing them more or less near to the cylinder while it is in motion, augments or diminishes the degree of friction.

When the machine is to be used, a cord attached to each rod is fixed by the opposite end to the part of the patient's body, on which the vibration is intended to operate, and the cylinder set in motion. Few patients are at first capable of supporting the maximum of the action of this machine.---The diseases in which vibration, thus excited, has been found useful, are some arthritic affections, paralysis, and uterine obstructions. Dr. Schoenberg, of Constantinople, who has published a description of the machine, with observations on its effects, supposes its action to hold a middle place between frictions and electricity, or rather that it is a compound of both these powers.

Hufeland & Himly's Journal der Practischen Heilkunde, Feb. 1813.

III.—SURGICAL.

New Operation for Popliteal Aneurism.—A new method of operating for the cure of Popliteal Aneurism has been employed in Dublin with the most complete success, which seems to open new and important views with respect to the treatment of diseased and wounded arteries in general. The operation was performed by Mr. Crampton, Surgeon-General, at the King's Military Infirmary, near Dublin, on the 15th of October. "The femoral artery was laid bare at the usual place, by an incision three inches in length, and *compressed* (but not tied circularly) by a narrow tape, so as completely to obstruct the current of the blood *with the least possible disturbance to the artery*, or *injury to its coats.* The ligature was by a peculiar contrivance applied in such a manner as to enable the operator to tighten or to relax it at pleasure, without interfering with the wound. In two hours and a quarter the ligature was gently relaxed, but not completely loosened; no pulsation in the ham. In twenty-four hours the artery was relieved from all compression; but, as a measure of precaution, the ligature was left in the wound. In forty-eight hours the ligature was withdrawn, and the wound was united by adhesive plaster." The patient was examined on the fifth day by several professional gentlemen; his health was not in the least degree deranged. The tumor, which had decreased by one half, was without pulsation, and nearly incompressible. The temperature of each foot was 84°. On the 14th day the wound was nearly healed, and the man went about the ward on crutches. On the 18th day the wound was healed, and the tumor, which could be seen only in the extended position of the limb, was incompressible, and altogether free from pain. The advantage of Mr. Crampton's operation consists in its imitating in the most favourable way the process of nature, in the spontaneous cure of aneurism. 1st. By interrupting the course of the blood through the ruptured artery, the fluid contents of the aneurismal sac are allowed to coagulate, and the circulation is thrown upon the collateral branches. 2d. The subsequent obliteration of the artery is effected by a natural process, which protects the patient from the long train of sufferings, and of dangers necessarily attendant upon the permanent contraction of a great artery,

and its separation from the ligature by the process of sloughing or ulceration.

IV.—CHEMICAL AND PHARMACEUTICAL.

Phosphorus.—Locbenstein, a German chemist, has ascertained that the best solvent for phosphorus is sulphuric æther, combined with a portion of any essential oil.

Acetic Acid.—M. Nasse, of the Imperial Academy of Petersburg, in a letter to Professor John, relates the following singular experiment, made by him. A mixture of equal bulks of carbonic acid gas, obtained from Carara marble by dilute sulphuric acid, and common air were put into a vessel, with a quantity of water scarcely sufficient to cover its bottom. It was then corked, and put aside for some months, during which time it was occasionally shaken. It was then opened, and left for some weeks with the mouth slightly covered; after which the taste and smell afforded evidence of acetic acid having been formed in it. No vegetable or animal matter was present!

Milk.—C. F. Schwarz, in an inaugural thesis, published in 1813, has given the following analysis of milk:

100 parts of cow's milk contain		100 parts of human milk contain	
Phosphate of lime.....	1·805	Phosphate of lime.....	2·500
——— of magnesia	0·170	——— of magnesia .	0·500
——— of iron.....	0·032	——— of iron	0·007
——— of soda.....	0·225	——— of soda	0·400
Muriate of potass.....	1·350	Muriate of potass.....	0·700
Lactate of soda.....	0·115	Lactate of soda.....	0·300

VI.—NOTICES OF LECTURES.

Royal College of Surgeons, London.—The commencement of the Annual Course of Lectures was on the 24th ultimo. They will be continued on Tuesdays and Fridays at Three. First Part—*Human Anatomy and Surgery,* by Mr. Abernethy. Second Part—*Comparative Anatomy,* by Mr. Astley Cooper. *Hunterian Oration,* by Sir W. Blizard, Knt. on Tuesday, February 14, at four o'clock.

Dr. Hooper and Dr. Ager will begin their next Course on Monday, Feb. 7, on the Theory and Practice of Physic, and on Chemistry and the Materia Medica, at Mr. Brookes's Theatre, Blenheim-st.

VII.—MISCELLANEOUS.

J. Haviland, Esq. M.A. and L.M. Fellow of St. John's College, is elected Professor of Anatomy to the University of Cambridge, in the room of the late Sir B. Harwood.

Mr. John Anderson, F.L.S. and F.H.S. is appointed by the Court of Assistants of the Society of Apothecaries, through the particular recommendation of Sir Joseph Banks, Bt. President of the Royal Society, and of other competent judges, to the situation of Principal Gardener to the Botanic Garden at Chelsea, vacant by the death of Mr. John Fairbairn. This appointment, and the recent grant of a considerable sum of money for repairing and improving the premises and garden, so that they may promote the objects of the learned donor, Sir Hans Sloane, viz. the cultivation and study of Botany, reflect the highest credit on the Court; and, together with the late nomination of Professor Brande, as their Chemical Operator, evince a real regard to the cause of science.

SIXTH REPORT

Of the GENERAL COMMITTEE *of* ASSOCIATED APOTHECARIES, *&c.*

Crown and Anchor Tavern, January 10th, 1815.

THIS COMMITTEE having now received a printed copy of the "BILL for enlarging the Charter of the SOCIETY of APOTHECARIES in the City of *London*, granted by His Majesty King *James* the First, and for better regulating the Practice of Apothecaries throughout *England and Wales**," which is intended to be introduced into Parliament in the present session, have carefully examined the same.

The Committee observe, with sincere concern, that the Royal College of Physicians have not admitted of any alteration or modification of the clause, making it penal for any Apothecary "*refusing to compound or unfaithfully compounding medicines prescribed,*" notwithstanding the memorial of this Committee, dated May 25th, 1814, to that effect.

Consequently the Committee deem it to be their duty to petition against the Bill, merely that they may be entitled, when the Bill is submitted to a Committee in Parliament, to appear there by counsel for obtaining such modification of the said clause as they have been instructed to propose; and likewise that they may have opportunity to watch over the important interests confided to their charge.

The Committee have great satisfaction in remarking, that all the most material suggestions resulting from the General Meeting of May 12th ult. or since offered by the Committee, have been freely and readily adopted by the Committee of the Society of Apothecaries, who appear actuated by a real desire for the passing of an Act, as consonant with the wishes of every Apothecary, as conducive to the improvement and interests of that branch of the Medical Profession.

The Committee have ordered the said Bill to be printed, and a copy to be sent to the Chairman or Secretary of every District Meeting; and that the following Resolution be published.

"It appearing to this Committee, that several of the country districts have expressed their disapprobation of the Bill now about to be introduced into Parliament, from its not including the practice of Surgery and Midwifery,

"*Resolved,* That such districts be informed, that these branches of the Medical Profession could not be embodied into the Act "*for better regulating the Practice of the Apothecary;*" but the Committee trust, if this Act should receive the sanction of the Legislature, that the Royal College of Surgeons will think it right to apply to the same authority for power to superintend the regulation of the practice of surgery and midwifery. If, however, that body should not undertake such application to Parliament, the Committee will consider it their duty, on the behalf of the Surgeons and Apothecaries of England and Wales, to adopt such measures as they may be advised, to bring in a Bill for the accomplishment of that object."

G. M. BURROWS, Chairman.

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* The NEW BILL is precisely like the one in the *Medical Repository*, (vol. i. p. 156, 396, 524,) except the last clause but one, viz. "Limitation of Actions," which is new, but does not affect the principle of the Bill; and that there are a greater number of blanks left, which must always be filled up in the Committee of the House of Commons.

A METEOROLOGICAL JOURNAL,

From the 21st of December, to the 20th of January, 1815,

KEPT AT RICHMOND, YORKSHIRE,

NW from London.

D.	Barometer. Max.		Min.		Therm. Max	Min.	Rain Gage.	Winds.	Weather.
21	29	55	29	49	35	31		N..E..	1 S..
22	29	30	29	30	36	29		E..	1 S.. 4Moon...
23	29	46	29	46	34	29		E..	1 Cy.. 4 Moons..
24	29	50	29	50	34	29		E..	1 S...
25	29	49	29	44	34	29		EbN..	1 Sh of Snow. & S. 4Cy..
26	29	40	29	24	33	30		ENE..	1 Cy...
27	29	05	28	99	33	30		ESE..	1 Snow. 2 Cy.. 4 Moon.
28	29	37	29	33	33	28	Melted	ENE.	1 Cy...
29	29	33	29	30	35	29	Snow	NW.SW.SE.	1 Cy.. 4 Moon...
30	29	39	29	27	39	34	.17	SSE..	1 Mist.. 2 R. 4 Moon..
31	29	82	29	64	39	32		SW..	1 S...
1	30	03	29	98	39	34		WNW	1 S...
2	30	04	29	02	38	34		ESE.	1 Mist..
3	29	94	29	83	36	27		SSE.	1 3 4 Cy.. 2 S.
4	29	73	29	73	32	28		SbE.	1 3 4 Mist.. 2S.
5	29	72	29	72	33	29		S.	1 Mist...
6	29	72	29	52	33	28		W..	1 S...
7	29	17	29	15	34	28		SW..	1 S.. 2 Cy..
8	29	49	29	48	34	27		W.	1 S...
9	29	12	29	09	41	34		WSW...SW....	1 S. 3 Cy..
10	29	21	29		38	30		W...	1 S..
11	29	55	29	31	35	30	Melted	W...	1 Snow.. 2 S...
12	29	74	29	62	34	25	Snow	WNW..	1 S...
13	29	44	29	55	39	29	.14	SE.W..	1 Cy.. 2Sn. 3mist...4st...
14	29	88	29	67	40	36		NW.N..	1 Cy..
15	29	92	29	85	38	29		NE.SE..	1 Cy.. 4 Starl..
16	29	96	29	99	38	35		WNW..	1 S. 2 Cy..
17	29	97	29	88	38	30		NW..	1 S..
18	29	86	29	77	35	31		NbW	1 S. and Sh of Snow.
19	29	70	29	60	34	26		NE..	1 S.. and Sh of Snow..
20	29	60	29	60	33	30		EbN...E..	1 Sn.... 2 Sn.. 4 moons..

The quantity of rain in December was 2 inches 63-100. Catarrhal and pulmonary complaints, attended in many instances with much fever, were the prevailing diseases of this period. Typhus was next in order, and was evidently propagated by contagion. Almost every case proved intractable and tedious, although not many were fatal. Varicella still prevails, and in a few instances has appeared in children under vaccination, witho ut the progress of either disease being sensibly affected. A few cases of each of the following diseases have been under treatment during this period: Anasarca, Asthenia, Cynanche Tonsillaris, Cystirrhœa, Dia rrhœa, Enteritis, Erysipelas, Gastrodynia, Icterus, Ischuria, Menorrhagia, Phthisis, Spasm, and Urticaria. The lady mentioned in the last Report as having pulmonary consumption supervening on typhus, died rather suddenly on the 14th inst. by the bursting of a vomica whilst in the act of vomiting. The matter was discharged in such quantity as to produce suff ocation in a few hours.

DISEASES.	DISTRICTS. 1 S.W.	2 S.	3 S.E.	4 E.	5 N.E.	6 N.	7 N.	8 W.	9 Surry sideW	10 Surry sideE.	11 Hamp Highg	No. of Cases.	Fatal.
Abcessus Psoas	1											1	
Anasarca	3		3	2	6	4	5	5	2	1		31	5
Ascites	1		1		3	4	1	1				11	1
Asthma	11	5	6	1	37	12	35	18	4		6	135	6
Acne			2	1	2			2	1			8	
Apoplexia	1			2	4		3	3	2	4		19	9
Aphtha			2		6	3		8	3			22	
Amenorrhœa	4		5	2	3	3	6		4		3	30	
Asthenia	7	13	7		12	7		3	7	7	4	67	
Abortio				3	4		1	2	2	4	2	18	
Bronchitis *acuta*	3		2		1		2		1	6		15	2
—— *chronica*		1			4			2	2	10		19	1
Cancer						1						1	
Cephalæa	2				3				1			6	
Chlorosis	6		4				1	6	2		5	24	
Cholera	13		2	1		3	1					20	
Chorea	2			1								3	
Cephalalgia	8	4	7		16	3	6	3	5	4	3	59	
Colica	7		1	7	4		3	2	1			25	
Catarrhus	42	32	25	33	34	14	53	57	23	40	13	366	
Convulsio	1		1	2	3			1		2		10	4
Cynanche *Tonsillaris*	8	3	8	7	8	4	6	9	4	17	10	84	
—— *maligna*	2	7		1		2	2	2				16	1
—— *Trachealis*					1			1				2	1
—— *parotidea*						1		3		1		4	
Diabetes								1				1	
Dysenteria	2	8	2		2	3	2	7	2	2		30	2
Diarrhœa	12	9	9	8	7	13	22	16	7	4	5	112	
Dyspnœa	13	1			3	4	1	7	2	1	2	34	
Dyspepsia	13	3	15	24	13	7	14	27	14	9	11	150	1
Dysuria	6				1	4		1				12	
Eczema										2		2	
Ecthyma					3							3	
Erythema			2			3	1		1			7	
Erysipelas	5		4		4	4	5	2	3		2	29	
Enteritis	3	1	1		1		1	1		6		14	2
Entrodynia		2	7		7	1		4	5	1	3	30	
Enuresis					1	3						4	
Epilepsia			2	4	3		4		1	1		15	1
Epistaxis						1			1			2	
Febris *remittens*	8	16	12	5	16	5	5	2	4	8	3	84	
—— *intermittens*	1		1	4	2	2	1		2			13	
—— *puerpera*							1	1		4		6	
—— *synocha*		4				1			2			7	
Farunculus						3			1			4	
Gonorrhœa *pura*						1						1	
Gastritis							1	2		2		5	
Gastrodynia	9		5	6	7	1		7	4	6	4	49	
Hæmatemesis	2		1	1		2						6	
Hæmoptoe	8		1	1	3	8	1	1		1		24	1
Hæmorrhois	3		4	2	4	2	1	2	4	2	2	26	
Hepatitis	1		2	11	2	4		1	3	7		31	1
Hysteria	4	7	3		6	10	3	2	5	4	4	48	
Hydrocephalus	2	1		1		3		1		3		11	7
Hydrothorax	1			1	1	4		2				9	2
Herpes	2	2	2	3	5	3	2	3	2	1		25	

DISEASES.	DISTRICTS. 1 S. W.	2 S.	3 S.E.	4 E.	5 N.E.	6 N	7 N.W.	8 W.	9 Surry sideW	10 Surry sideE.	11 Hamp Highg	No. of Cases.	Fatal.
Hypochondriasis	1		2	1	1	1	2	3	2			13	
Icterus	2	1	1	2	1	4	4	3				18	
Impetigo	2				1		1					4	
Ischuria			1	1	1				1		1	5	
Leucorrhœa	3		3	2	3	2	3	3	4			23	
Lithiasis		1			4							5	
Lupia						1						1	
Lichen				2					1			3	
Lumbago					3		1					4	
Mania					3		5					8	
Melancholia							1		1			2	
Menorrhagia	7	1	5	3	3	4	5	10	3	7	2	50	
Morbi *Infantiles**	11	13	12		13	14	12	29	14	55	7	180	4
—— *Biliosi*	22	1	21	3	6	8	14	18	15	34	5	147	
Nephritis				3				2				5	
Nephralgia				1				2				3	
Obstipatio	4	3	5	5	6	7	3	2	3	3	2	43	
Ophthalmia	15	2	7	2	7	2	5	13	4	7	6	70	
Otalgia						2						2	
Odontalgia					1		1		2			4	
Phlogosis				1		1				1		3	
Paralysis	2	2	1	4	4	6	6	4	2	2		33	2
Phthisis *Pulmonalis*	8	1	2	4	7	5	21	11	2	2	1	65	15
Pertussis	2	3		4	1	6	3	2				21	1
Peritonitis			1	2	2	1	2		1	1		10	
Phrenitis								2				2	
Pneumonia	7	5	11	8	9	16	15	13	6	13	3	108	6
Pleuritis					1	1	2	1				5	
Pleurodyne	2			1		2		2				7	
Pemphigus					1		1	3				5	
Podagra	4	1		1	2	3	1	3	1	2		22	
Porrigo *larvalis*	2	1						2				5	
—— *scutulata*	1		3		3	1	1		4			13	
—— *favosa*			1					2				3	
Psoriasis		5	4			5	2	5				21	
Purpura					1	3						4	
Pyrosis	5	3	2	1	3	2			2			18	
Rachitis					1							1	
Rheumatis. *acut.*	14	11	10	10	8	12	6	12	6	11		100	
—— *chron.*	11		4	12	21	10	26	10	5	7	5	111	
Rubeola	5	5		13	5	1	1	2		1	5	38	4
Scabies	5		5	5	7	7	27	13	4	4	3	80	
Scarlatina *simplex*	3	5			1	1			2	3		15	
—— *anginosa*	3	3			4				1	6		17	
Splenitis										2		2	
Scrofula			4		4	5		3	4	3	2	25	
Tabes *Mesenterica*	1			1	1		1			1	2	7	2
Typhus	2				1	7	5					15	3
Variola	2			1	3	10	8	5		5	2	36	6
Varicella	4	9		9	5		1	3	2		3	36	
Vermes	12		6	2	1	9		2	4	5	2	43	
Vertigo	5		3	5	7	6	5	5	4	6	4	50	
Urticaria	1				1		1	2		3		8	
Total No. of Cases	385	195	267	243	399	320	382	410	228	344	137	3310	
Total of Deaths													90

* *Morbi Infantiles* is meant to comprise those Disorders principally arising from dentition or indigestion, and which may be too trivial to enter under any distinct head; *Morbi Biliosi*, such Complaints as are popularly termed *bilious* but cannot be accurately classed.

MANCHESTER

AN ABSTRACT from the REGISTER *of those* DISEASES *of* LONDON, *presumed to originate in, or be influenced by, the State of the* ATMOSPHERE, *with a* DIURNAL REFERENCE *to the* METEOROLOGICAL TABLE.

METEOROLOGICAL TABLE,

From the 20th of DECEMBER, 1814, to the 19th of JANUARY, 1815.

M.	Therm.	Barom.	Hygrom. Dry.	Hygrom. Damp.	Winds.	Atmos. Variation.	D.	Asthma.	Apoplexia.	Bronchitis.	Cholera.	Cephalalgia.	Colica.	Catarrhus.	Cynanche.	C. Trachealis.	Dysenteria.	Diarrhœa.	Dyspnœa.	Erysipelas.	Febres.	Hæmoptoe.	Morbi Biliosi.	Ophthalmia.	Paralysis.	Phthisis.	Pertussis.	Pneumonia.	Podagra.	Rheumatismus.	Rubeola.	Scarlatina.	Typhus.	Variola.	Varicella.	Vertigo.	Urticaria.
	40 46 39	30[1]		5	SW..	F...C..C..Fog.	20	5	—	—	1	2	—	12	2	—	1	3	1	1	2	—	9	4	1	1	—	3	1	8	1	—	1	1	—	2	1
	38 40 38	30 29[8]		6	E..	F..F.C..F..	21	7	1	1	—	2	1	11	3	—	1	3	2	—	3	—	8	4	—	5	1	6	—	14	4	—	—	1	1	2	—
	32 36 34	29[7] 5		2	SE..	F..C..C...	22	5	—	3	3	2	—	12	—	—	1	5	—	2	5	1	5	3	1	7	—	6	1	7	1	1	—	—	—	—	—
	35 76 34	29[5]		20	E..	C...C..C.	23	3	1	1	—	—	4	14	5	—	—	3	1	3	2	2	5	3	2	5	1	4	2	6	3	2	—	2	2	3	—
	35 76 32	29[6]		2	SE..	C...C..C..snow..inn	24	4	2	2	—	—	1	14	2	—	2	3	2	3	5	1	5	3	2	4	—	4	1	8	—	2	1	3	—	2	—
○	34 37	29[6] 7		25	E..	Snow.C..Snow..C.	25	5	2	—	2	—	1	11	6	—	2	2	1	1	3	—	3	5	3	3	—	3	—	8	1	—	—	1	1	5	—
	35 42 41	29[4] 29		15	E..	Snow.C....R.C..	26	7	—	1	—	3	—	10	2	—	—	4	5	2	6	—	4	—	1	2	1	4	2	8	1	3	—	—	1	3	—
	42 40 37	29 6		35	SE..	R..R.R...R... in N	27	6	1	—	—	8	1	12	3	1	1	7	1	1	3	—	9	2	—	—	—	4	—	8	1	—	—	2	2	4	—
	37 40 43	29[8] 7		60	E..	R..R.R..C...	28	2	—	1	—	4	1	7	8	—	—	7	3	1	2	2	6	3	2	1	1	8	2	9	2	3	1	2	2	2	—
	45 47 46	29[7] ...		60	E.	Fog...C..R.C..	29	5	2	2	2	3	2	14	5	—	3	4	1	1	2	2	6	3	1	3	2	5	—	7	—	—	—	1	—	1	—
	45 46 39	29[9] 30		25	W..	F....Fog.F...C..	—	4	2	—	—	4	—	17	3	—	1	6	3	1	4	—	9	2	3	4	1	4	1	13	3	—	1	2	3	2	1
◑	37 39 37	30[2] 4		10	W.	F...F..F..	1	6	1	1	1	2	1	12	4	—	—	3	—	2	2	—	6	3	—	1	—	1	—	6	1	1	—	—	2	1	—
	37 40 35	30[5]		2	NE..	Fog.C..C..	2	6	1	2	—	—	1	12	3	—	—	3	—	—	3	1	5	3	1	—	1	6	—	7	1	2	2	1	1	2	—
	32 35	30[5]		1	E.	C...C...C...	3	5	—	1	—	2	—	17	4	—	1	6	1	—	6	1	5	—	—	2	1	6	1	5	—	—	—	3	1	—	—
	32 33 34	30[2]		1	E.	C...Snow.C...	4	6	—	1	2	2	3	11	—	—	—	2	2	—	2	2	7	—	1	3	—	6	1	12	—	1	1	—	—	4	1
	33 34	30[1]		1	NW..	C....C...C....	5	5	—	1	—	1	1	9	5	—	1	3	—	1	2	—	8	3	1	3	2	4	2	10	—	1	—	1	—	1	—
	36 37 33	30		4	NW.	C....C...C...	6	—	2	2	—	1	2	15	—	—	1	2	—	—	1	—	2	2	—	1	—	6	2	4	2	2	—	2	1	3	—
	30 33 34	30		5	NW.	F..C..F..R.	7	7	—	1	1	—	2	4	4	—	2	2	1	—	6	2	3	2	1	3	2	2	—	2	1	7	—	6	1	2	—
	35 32	29[5]		20	NW..	C.C..C..	8	—	1	1	—	1	—	7	4	—	—	4	—	2	1	1	5	2	2	—	1	—	—	2	2	—	—	—	1	—	—
	30 36 41	29[6] 8		15	W..	F..F..C...R.	9	9	—	3	1	2	—	10	2	—	—	1	—	2	7	1	4	3	—	1	1	4	1	5	2	—	—	1	—	1	—
◉	43 45 41	29[8]		30	W..	C.C.C..F...	10	6	—	—	—	4	—	8	7	—	—	4	—	—	6	1	3	—	2	—	1	2	1	4	2	—	1	—	—	1	—
	40 39	29[1]		40	W...	F.R.F...C..	11	4	—	—	2	2	—	17	4	—	2	4	2	—	6	1	3	3	—	1	—	2	—	7	—	1	1	1	—	—	1
	30 33 32	30 30[1]		15	NW..	F..C..C...F..	12	5	—	2	—	3	—	11	2	1	3	1	—	—	5	2	4	4	2	2	—	6	—	9	—	3	—	2	1	1	—
	30 36 39	30[2] 29[9]		25	W...	C...C...R..R..	13	—	—	1	—	2	—	8	1	—	1	4	—	2	3	—	2	1	—	—	—	—	—	4	1	—	—	1	1	1	—
	40 41 40	29[5]		45	NW..	C....C..C...	14	5	—	—	—	2	—	17	1	—	1	4	2	1	3	1	2	2	—	2	—	4	—	5	3	—	1	—	5	1	—
	36 40 34	30[3]		15	E..	C...C..C...	15	—	1	3	—	—	1	14	2	—	1	2	—	—	—	2	3	—	1	—	—	2	—	4	3	—	1	4	—	2	—
	33 40 33	30[4]		25	NE.	C....C..C...	16	2	—	—	—	1	—	18	8	—	1	5	1	—	4	—	3	2	2	2	1	3	1	6	2	—	1	—	—	—	—
	34 36 32	30[2]		6	NW...	C....C..C...	17	3	2	—	1	1	—	15	3	—	2	2	—	—	3	1	3	2	—	2	1	3	—	7	—	2	2	1	3	—	1
◐	33 34 32	30[2]		24	NW..	C....snow.snow..c...	18	6	—	2	—	1	1	5	2	—	—	4	3	2	2	—	2	4	—	3	2	2	—	5	—	—	—	1	1	1	—
	31 33 30	30		20	N..	C..C...snow.C..F...	19	3	—	2	1	1	1	11	3	—	—	2	1	1	4	—	3	1	1	2	—	1	1	5	1	—	1	—	1	1	—
	Princes Street, Cavendish Square.						No. of Cases...	135	19	34	20	59	25	366	104	2	30	112	34	29	110	21	147	70	33	65	21	113	22	211	38	32	15	36	36	50	8
							Fatal.....	6	9	3	—	—	—	—	1	1	2	—	—	—	—	2	—	—	2	15	1	6	—	—	4	—	3	6	—	—	—

Total of Cases,...2000. Total of Deaths,...61.

Quantity of Rain from December 20, 1814, to January 19, 1815, 80-100ths of an inch.

BILL OF MORTALITY *from December* 20, 1814, *to January* 17, 1815.

CHRISTENED.

	Dec. 20-27.	*Jan.* 3.	*Jan.* 10.	*Jan.* 17.
Males.....	168	322	306	236
Females.....	148	296	229	210
	316	618	535	446

Total.....1915.

BURIED.

	Dec. 20-27.	*Jan.* 3.	*Jan.* 10.	*Jan.* 17.
Males.....	127	207	192	174
Females.....	132	218	214	175
	259	425	406	349

Total.....1439.

OF WHOM HAVE DIED,

Under 2 Yrs..	78	125	105	87
Betw. 2 & 5...	33	61	40	44
5 & 10...	12	26	20	15
10 & 20...	9	9	18	13
20 & 30...	18	31	30	24
30 & 40...	21	32	35	36
40 & 50...	26	36	42	34
Small Pox.....	13	23	17	16
Betw. 50 & 60...	22	37	41	30
60 & 70...	19	31	32	29
70 & 80...	13	23	27	20
80 & 90...	6	10	10	11
99 & 100...	2	4	5	5
101	—	—	1	1

.....Total.....69.

SNOW has several times fallen, but in such small quantities as seldom completely to have covered the ground in and near London. Frost has never continued to be intense, though, proceeding by slow congelation, ice has acquired a thickness of about two inches.

This month, considering the season, may be pronounced to have been healthy. The mortality is less by nearly eight hundred, and the cases of diseases in the monthly registers of our Reporters are fewer than in the preceding period.

According with our observations, bronchial and pneumonic attacks are less frequent and severe. Catarrh is sensibly diminished, though many of the cases were severe, and attended with much fever: but from the very large increase of Phthisis, it may be inferred, that the effects of the numerous cases of Catarrh, recorded in the last tables, have already manifested the rudiments of this wide-spreading and destructive disease.

There are fewer cases of Podagra, which is a circumstance contrary to what might have been expected, as Gout is certainly more frequent in the beginning than at any other period of the year. But we must look for further evidence before we suspect there are grounds for impugning a received opinion.

Variola and Rubeola have greatly decreased; and the deaths from these eruptive

disorders are proportionally diminished. From the diminution also of Morbi Infantiles and Biliosi, it may be concluded that derangements of the *primæ viæ* have been more rare.

Typhus also appears to be checked: probably arising from the influence of the cold season. We have frequently had occasion to remark, that the occurrence and progress of this fatal disease, in this metropolis, has been happily rendered less frequent and dangerous, from the active and wise measures some years since adopted, and the efficacy of which is now universally acknowledged for preventing the diffusion of its contagion. We rejoice to find that similar regulations have been found so eminently successful in Germany; where, as well as in other parts of the continent, both in the private dwellings of the inhabitants and in the hospitals, from recent calamitous circumstances, Typhus has been very prevalent, and most exceedingly destructive.

Cynanche maligna has increased; but it proved fatal in one instance only.

Four cases of Puerperal Fever have again happened in the practice of an intelligent Reporter in the tenth district; but as none are reported fatal, we feel satisfaction in supposing that the treatment has been successful in all of them. But we must again repeat our caution, that the *fomes* of infection be not conveyed by means of the practitioner. We are certain that the hint will not be disregarded; and that, if any thing worthy of remark took place in these cases, the public will have the benefit of the observation. Scarlatina is at present more rife in this district than elsewhere.

Several of the bilious complaints occurred in children, the result of improper indulgence in eating, which parents permit in holiday time. An emetic, a purgative, and a few days abstinence have generally been sufficient to restore health to the little sufferers.

Six cases of acute Rheumatism yielded very rapidly to a combination of spirit of turpentine and bark, after the bowels and skin had been freely acted upon by calomel and antimonials. In chronic Rheumatism this practice has not proved successful.

In a fatal case of Anasarca, the disease became general three weeks from the commencement. It supervened on the sudden cessation of an unusual secretion of urine. At length the patient was lethargic, and died in three days.

Of three of the patients who died from Asthma, two were aged, and had suffered several years: the other was thirty-six years of age only; and fell a sacrifice, on the first attack, to the spasmodic form of this disease, after a fortnight's illness.

Two of the cases of Herpes were H. præputialis, and had recurred several times in the same patients.

In two cases of Lepra, reported in the former Tables, much benefit was derived from the use of the Dulcamara, as recommended by Dr. Crichton.

The child who died of Trismus, (see Table of No. 13,) appeared to suffer from dentition: but no satisfactory history could be obtained; and the parents were so ignorant and obstinate, nothing was allowed to be attempted for its relief.

The good effect of the following mode of treatment has been very conspicuous in two cases of apparent Schirrous Testicle. Both were of long standing. In the one, the testicle was about four times its ordinary size, hard and stoney to the touch, and heavy and painful upon the cord, which was also thickened and knotty. The patient was sallow in complexion, emaciated, and tormented with frequent and severe shooting pains at the lower part of the abdomen, in the testicle, and along the course of the spermatic cord. In the other case, besides the abovementioned symptoms, the scrotum was ulcerated in several places, discharging a thin, ill-digested, acrid pus. Both patients were ordered to take five grains of the Pilul. Hydrargyri every night at bed-time with this powder:- R. Spongiæ ustæ ℈j.

Potassæ Nitratis gr. x. Pulv. Sarsaparillæ ʒj. M. ut fiat pulvis ex quovis vehiculo ter quotidie sumendus. The dose of the burnt sponge was gradually increased to ʒj, and the sarsaparilla to ʒ iij.—No external application was used in the first case; in the second, the scrotum was kept constantly moistened with a solution of two drachms of sulphate of zinc in six fluid ounces of water. In both instances the pains subsided in the course of a week, the testicles gradually became softer and reduced in size; and the ulcers in the second cicatrized. Both cases were cured in less than six weeks.

A very severe case of Hæmorrhage from the nostril occurred, which could not be restrained until the cavities were completely filled; which was conveniently and expeditiously done by tying a long rounded dossil of lint to the end of a very small bougie, leaving a space to which a string was attached, between the end of the bougie and the beginning of the lint, of about three inches. The bougie was thus nearly carried through the cavity, before the lint entered it. The bougie being curved in the fauces by a pair of forceps, the fore finger and thumb were then introduced, and by pulling the string gradually until the lint was as far as the uvula, the compression became equal throughout the nasal canal. The string was then cut off easily and the hæmorrhage ceased. It had been previously attempted in vain to stop it by plugging the anterior nostril. Two days after the above-mentioned distension of the nostril, there was an increased impetus, and a slight renewal of bleeding from the same side. Fearing to remove the lint, the compression was made more complete by filling the other nostril totally, which was done with the lint conducted by the bougie as before mentioned with perfect success.—Where the instrument which may be effectually employed in this case is not at hand, the substitution of a bougie in the manner here related may be very proper.

Examinations post mortem.—1. In a case of Diarrhœa, of two months' continuance, the villous coat of the valvulæ conniventes was in many parts in a high state of inflammation, and the muciparous glands of the intestines were very large. This patient was also afflicted with Melancholia.—2. In a case of Paralysis, water was found in the ventricles of the brain, and its arteries were ossified.—3. In one case of Phthisis, there was ulceration of the larynx and trachea; besides large abscesses of the lungs. A week before his death this patient coughed up daily several flakes of coagulable lymph.

Monthly Prices of Substances *employed in* Pharmacy.

		S.	D.
Acaciæ Gummi elect.	lb.	3	6
Acidum Citricum		34	0
—— Benzoicum	unc.	6	6
—— Sulphuricum	P. lb.	0	8
—— Muriaticum		2	0
—— Nitricum		4	0
—— Aceticum	cong.	4	6
Alcohol	M. lb.	4	6
Æther sulphuricus		10	6
—— rectificatus		12	0
Æruginis	lb.	8	0
Aloes spicatæ extractum		6	0
—— vulgaris extractum		5	6
Althææ Radix		1	3
Alumen		0	5
Ammoniæ Murias		2	6
—— Carbonas		4	0
Amygdala dulcis		5	0
Ammoniacum (Gutt.)		9	6
—— (Commun.)		3	6
Anthemidis Flores		2	3
Antimonii oxydum		5	0
—— sulphuretum		1	0
Antimonium Tartarizatum		6	6
Arsenici Oxydum		1	0
Assafœtidæ Gummi-resina	lb.	6	6
Aurantii Cortex		4	6
Argenti Nitras	unc.	6	9

		S.	D.
Balsamum Peruvianum	lb.	50	0
—— Tolutanum		26	0
Benzoinum elect.		10	0
Calamina præparata		0	6
Calumbæ Radix		3	6
Cambogia		10	6
Camphora		8	6
Canellæ Cortex		6	6
Cardamomi Semina opt.	lb.	12	0
Cascarillæ Cortex		3	0
Castoreum	unc.	5	0
Catechu Extractum	lb.	2	4
Cetaceum		2	9
Cera alba		4	0
—— flava		3	6
Cinchonæ cordifoliæ Cortex (yellow)		8	6
—— lancifoliæ Cortex (quilled)		10	6
—— oblongifoliæ Cortex (red)		16	0
Cinnamomi Cortex		20	0
Coccus (Coccinella)	unc.	3	6
Colocynthidis Pulpa	lb.	7	6
Copaiba		6	6
Colchici Radix		3	6
Croci stigmata	unc.	5	0
Cupri sulphas	lb.	1	0
Cuprum ammoniatum		14	0
Cusparieæ Cortex		4	0
Confectio aromatica		10	0

		S.	D.
Confectio Aurantii	- -	3	6
—— Opii	- - -	5	0
—— Rosæ Caninæ	- -	2	3
—— Rosæ Gallicæ	- -	2	0
—— Sennæ	- - -	1	8
Emplastrum Lyttæ	- - -	7	6
—— Hydrargyri	- -	4	0
Extractum Cinchonæ	- - unc.	2	6
—— Cinchonæ resinosum	-	5	0
—— Colocynthidis	- -	3	6
—— Colocynthidis comp.	-	1	6
—— Conii	- - -	0	8
—— Elaterii	- - -		
—— Gentianæ	- - -	0	6
—— Glycyrrhizæ	- lb.	4	6
—— Hæmatoxyli	- unc.	0	8
—— Humuli	-	0	6
—— Hyosciami	- unc.	1	0
—— Jalapæ	- 2*s.* 0*d.* Res.	3	6
—— Opii	- - - -	3	0
—— Papaveris	- - -	1	0
—— Rhæi	- - -	2	6
—— Sarsaparillæ	- -	1	0
—— Taraxaci	- - -	0	8
Ferri carbonas	- - - lb.	1	0
— sulphas	- - -	1	3
Ferrum ammoniatum	- - -	5	0
—— tartarizatum	- -	4	6
Galbani Gummi-resina.	- -	10	0
Gentianæ Radix	- - -	1	3
Guaiacum	- - - - -	8	0
Hydrargyrus purificatus	- -	6	6
—— præcipitatus albus	- -	0	9
—— cum creta	- - -		
Hydrargyri Oxymurias	- unc.	0	9
—— Submurias	- - -	0	9
—— Nitrico-Oxydum	- -	0	9
—— Oxydum Cinereum	-	1	4
—— Oxydum rubrum	- -	6	0
—— Sulphuretum rubrum	-	0	8
Hellebori nigri Radix	- lb.	2	6
Ipecacuanhæ Radix	- - -	18	0
—— Pulvis	- - -	19	0
Jalapæ Radix	- - - -	6	6
—— Pulvis	- - - -	7	6
Kino	- - - - - - -	9	0
Liquor Plumbi Acetatis	- M. lb.	1	8
— Ammoniæ	- - - -	2	6
— Potassæ	- - - -		
Linimentum Camphoræ comp.	-	6	0
Lichen Islandicus	- lb.	1	4
Lyttæ	- - - - - -	14	0
Magnesia	- - - - -	9	0
Magnesiæ Carbonas	- -	3	6
—— Sulphas, opt.	- - -	1	6
Manna optima	- - -	7	0
— communis	- -	5	0
Moschus pod, (30*s.*)	in gr. unc.	40	0
Mastiche	- - - - lb.	6	6
Myristicæ Nuclei	- - -	22	0
Myrrha elect.	- - -	8	0
Olibanum	- - - -	3	0
Opoponax	- -	26	0
Opium (Turkey)	- - -	34	0
Opium (East India)	- - -	33	0
Oleum Amygdalæ	- - lb.	4	0
— Anisi	- - - - unc.	2	9
— Anthemidis	- - -	6	0
— Cassiæ	- - - -	8	0
— Caryophilli	- - -	5	6
— Cajuputi	- - - - -	6	6
— Carui	- - - - -	1	9
— Juniperi Ang.	- - -	3	0
— Lavandulæ	- - -	4	6
— Lini	- - - cong.	6	0
— Menthæ piperitæ	- unc.	4	6
— Menthæ viridis Ang.	- unc.	4	6
— Olivæ	- - cong.	23	0
— Olivæ secundum	- 12*s.* to 16		0

		S.	D.
Oleum Pimentæ	- - unc.	6	0
— Ricini optim.	- (per bottle)	9	6
— Rosmarini	- - unc.	0	9
— Succini 2*s.* 4*d.*	—— rect.	4	0
— Sulphuratum	- P. lb.	1	6
— Terebinthinæ	- - - -	1	3
— —— rectificatum	- -	1	9
Papaveris Capsulæ	- (per 100)	3	0
Plumbi Carbonas	- - lb.	0	8
— Superacetas	- - -	2	6
— Oxydum semi-vitreum	-	0	8
Potassa Fusa	- - - unc.	0	9
— cum Calce	- - -	0	6
Potassæ Nitras	- - lb.	1	5
— Acetas	- - - -	8	6
— Carbonas	- - -	1	9
— Supercarbonas	- -	4	6
— Sulphas	-	1	4
— Sulphuretum	- -	2	6
— Supersulphas	-	0	6
— Tartras	- - -	3	6
— Supertartras	- - -	1	6
Pilula Hydrargyri	- - unc.	0	9
Pulvis Antimonialis	- -	0	8
— Contrayervæ comp.	- -		
— Tragacanthæ comp.	- -		
Resina Flava	- - lb.	0	5
Rhæi Radix (Russia)	- -	40	0
—— (East India)	- -	16	0
Rosæ petal.	- - - -	9	0
Sapo (Spanish)	- - -	2	9
Sarsaparillæ Radix	- -	6	6
Scammoneæ Gummi-Resina	- unc.	2	6
Scillæ Radix siccat	- - lb.	5	6
Senegæ Radix	- - -	4	0
Sennæ Folia	- - -	7	0
Serpentariæ Radix	- -	30	0
Simaroubæ Cortex	- -	4	6
Sodæ Boras	- -	4	0
— Sulphas	- - -	0	10
— Carbonas	- - -	7	0
— Subcarbonas	- -	1	8
— — exsiccata	- -	5	0
Soda tartarizata	- -	3	0
Spongia usta	- - - -	26	0
Spiritus Ammoniæ	- M. lb.	4	0
—— —— aromaticus	-	4	0
—— —— fœtidus	- -	4	0
—— —— succinatus	-	5	0
— Cinnamomi	- - -	3	0
— Lavendulæ	- - -	4	6
— Myristicæ	- - -	3	6
— Pimentæ	- - -	3	6
— Rosmarini	- - -	4	0
— Ætheris Aromaticus	- -	6	6
— —— Compositus	- -	6	6
— —— Nitrici	- -	4	0
— —— Sulphurici	- -	6	6
— Vini rectificatus	- cong.	26	0
Syrupus Papaveris	- - lb.	2	0
Sulphur	- - - -	0	8
— Sublimatum	- -	0	10
— Lotum	- - -	1	0
— Præcipitatum	- -	1	2
Tamarindus opt.	- - -	2	6
Terebinthina Vulgaris	- - -	0	10
Terebinthina Canadensis	- -	7	6
Terebinthina Chia	- - - -	9	0
Tinct. Ferri muriatis	- -		
Tragacantha Gummi	- - -	7	0
Valerianæ Radix	- - - -	1	6
Veratri Radix	- - - -	1	6
Unguentum Hydrargyri-fortius	-	5	6
—— —— Nitratis	-	2	8
—— —— Nitrico-oxy.		3	0
Uvæ Ursi Folia	- - -	2	6
Zinci Oxydum	- - -	6	0
— Sulphas purif.	- - -	2	6
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Best Leeches, 9*s.* Bourdeaux Leeches, 6*s.* per dozen at Covent Garden Market.

LITERARY WORKS, &c.

We have to announce that a New Pharmacopœia of the Lond. Coll. of Physicians, and a Translation of it by Dr. Powell, are in great forwardness.

Dr. Edward Carbutt is translating the Physiological Researches on Life and Death of the late Professor Bichât.

Dr. John Clarke is preparing for publication Commentaries on the Diseases of Children.

The second volume of Essays on the Morbid Anatomy of the Human Eye, by J. Wardrop, F.R.S.E. is nearly ready for publication.

We are informed that Sir William Adams has for some time been preparing for publication a Treatise on the purulent Inflammation of the Conjunctiva (commonly called the Egyptian Ophthalmia) and its consequences; in which will be described the Practice pursued by the late Mr. Saunders, and the Improvements since made thereon by Sir W. Adams.

MONTHLY CATALOGUE OF BOOKS.

A Conspectus of the London, Edinburgh, and Dublin Pharmacopœias. By E. G. Clarke. 8vo. Cox and Son.

The Institutions of Physiology, translated from the Latin of Professor Blumenbach, with additional Notes. 8vo. Cox and Son.

Observations on the Animal Economy. By a Physician. 8vo. Callow.

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The First Report of a Society for preventing Accidents in Coal Mines, comprising a letter to Sir Ralph Milbanke, Bart. on the various modes employed in the ventilation of Collieries, illustrated by Plans and Sections. By John Buddle. 8vo. Walker, Newcastle; and Hatchard, London.

The Physiognomical System of Dr. Gall and Dr. Spurzheim. By J. G. Spurzheim, M. D. Royal 8vo. Baldwin and Co.

Delineations of Cutaneous Diseases. By T. Bateman, M.D. F.L.S. Fasciculus I. 4to. Longman and Co.

A Special Report of the General Committee of the London Infirmary for curing the Diseases of the Eye, &c. 8vo. Longman and Co.

Outlines of Natural Philosophy. Part II. By J. Playfair. 8vo. Longman and Co.

The Case of Johanna Southcott, as far as it came under his Professional Observations, impartially stated. By P. Mathias, Surgeon, &c. 8vo.

INDEX INDICATORIUS.

Dr. Watt's *Letter shall certainly appear in the next Number: obligations to numerous Correspondents alone prevented its publication in the present.*

The Communications of Dr. Plenderleath, Mr. Hennen, Mr. Newnham, &c. *are received.*

ERRATUM.—Page 76, line 7, *for* Dr. Phillips, of Worcester,—*read*—of Andover.

Many applications being made to the EDITORS, especially since the commencement of the present volume, to supply Gentlemen residing at a distance with the REPOSITORY, they beg leave to state, that Orders will be punctually executed by all Country Booksellers, Dealers in Books, Postmasters, Clerks of the Roads, or Newsmen; and without any additional expence to the Subscribers.

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THE

LONDON MEDICAL

REPOSITORY.

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PART I.

ORIGINAL COMMUNICATIONS.

I.

An Account of the Gangrena Contagiosa Nosocomiale, as it appeared at His Majesty's General Hospital at Bilbaô, in the Summer and Autumn of 1813. By John Hennen, Surgeon to the Forces, Dumfries.

The military events on the Peninsula, during the month of July 1813, in which the action of Vittoria was fought, rendered it necessary to form several hospital stations in the provinces of Alava, St. Andero, and Biscay. Among these, Bilbaô was selected, as capable of accommodating a large number of sick and wounded; as being easy of access, and remarkable for its salubrity.

The principal hospitals were distant about four miles from the town, and six from the sea. They consisted of a noble convent, which was chiefly occupied by medical cases; and of the upper floor of a very extensive building, formerly a rope-walk, belonging to the Spanish government, which was exclusively allotted for the reception of surgical cases, and placed under my care.

The *Cordeleria*, or Rope-walk Hospital, was built on the southern bank of a small, but rapid river, the Ibaicabal, which runs through a fertile valley, gradually opening from the town of Bilbaô to the Bay of Biscay. Its waters, which rise in the lofty mountains that bound Biscay and Alava, are strongly impregnated with iron, and abound in wholesome fish. The tide in the vicinity of the hospital rose between six and seven feet, and extended its influence about four miles up the stream.

The soil, in the immediate vicinity of the hospital, was dry and gravelly; shelving gradually from the water, until, at the distance of a mile, a lofty ridge of mountains rose behind, and perfectly screened it from the winds. These mountains, the highest of which is, by barometical observation, about 1400 feet above the level of the sea, abound in iron. On the opposite bank of the river, a chain of hills stretch along, at the distance of half a mile, leaving between their base and the water a fertile and well-drained flat.

Good water was scarce in the immediate vicinity of the hospital; although, with a very little arrangement on the part of the natives, a pure and never-failing stream might be brought from the neighbouring hills. This necessary article, as well as our provisions, which were wholesome and abundant, was supplied from the town by boats.

The prevailing winds, which were westerly and south-westerly, blew up the valley from the ocean; and a mild, steady breeze, usually prevailed. The state of the barometer, and the quantity of rain which fell, were not observed, for want of instruments. During the latter end of August, or the beginning of September, at which period the Hospital Gangrene first made its appearance, the weather was mild, and we had a few refreshing showers. The thermometer, at this period, ranged from 68° to 70°; but, towards the close of September, the mercury rose in the wards of the hospital to 74°, and one day as high as 78°. The nights were, however, generally cold, cloudy, and moist.

No epidemic disease occurred during our occupation of this station. The inhabitants were remarkably healthy and robust; and numerous instances of longevity were to be met with among them. The topography of the *Cordeleria* was not more favourable towards its selection as an hospital, than the interior of the building was comfortable and adapted to the purpose. It was 1200 feet long, by 40 broad; and 16 in height; well plaistered and floored, and raised 12 feet above the surface. On the first establishment, however, there were deficiencies in many articles of comfort and convenience. The more than apathy of our *magnanimous allies* the Spaniards, extinguished all hope of receiving effectual assistance from them; while the rapid movements of the army, and the distance of our stores, cut us off from the prospect of immediate supplies of our own. Our bedding, therefore, was extremely scanty; the wounded lying upon straw, and very much crowded together; which was one cause, no doubt, of the rapid progress of contagion. Our medicines, also, and other materials, which were purchased principally from the Spaniards, inde-

pendent of the shameful exorbitance of their price, were of the very worst description. We did not long, however, labour under these disadvantages. The talents and industry of Dr., now Sir J. McGregor, the head of the hospital staff, soon removed every cause of complaint; and our supplies became excellent and abundant.

In an hospital, situated as I have described, I found, on my arrival from Vittoria, in the last week of August, 1000 wounded men; the larger number of whom had arrived in successive escorts from the same place, many in waggons and carts. But a large proportion was so slightly wounded, as to be able to complete the journey (nineteen leagues) on foot. The remainder of our patients were brought from the lines before St. Sebastian, by sea; and these exhibited by far the most formidable cases. Those with sloughing sores had all been collected into a separate airy ward on the second floor. The cases were reported to me as mild, and yielding easily to the treatment adopted; but as I was well aware of the insidious nature of cases in a large hospital, full to an overflow, with gun-shot wounds pouring in, under all the circumstances of a siege, or a great battle; and the consequent confusion on such events, I was prepared for fever of the worst kind and most contagious nature. Under these impressions, I laboured incessantly on the police of the hospital; had it separated into wards and divisions; opened ventilators; removed nuisances both within and without; and enforced the most rigid attention to personal cleanliness. I had a most striking instance, within my own experience, of what attention to these points can effect in the way of prevention; for, at the general hospital at Elvas, of which I was principal medical officer during the whole period of the successful operation before Badajoz, in 1812, although 2500 wounded were treated there, yet, not a single instance of either hospital gangrene or typhus fever appeared among them; although both those diseases had raged with unexampled fury the two preceding years. This happy result I attributed to the removal of an enormous dunghill, the lower stratum of which was formed of the semi-putrid tow and bloody bandages left after the battle of Talavera; and which, on being turned up, was incrusted with the same kind of fungus mentioned by the older French surgeons, as appearing on the dressings at the Hotel Dieu. The smell emitted, while removing this decomposing mass, was almost insupportable; and, together with the effluviæ from two stagnant ponds, which I caused to be drained, threatened the safety of the whole neighbourhood.

My fears were soon verified at the *Cordeleria*; for in a few days the whole hospital was overrun with gangrene, which I more particularly dated from the arrival of some fresh wounded

men from Vittoria, of whom about thirty were in an advanced stage of the disease, which first appeared upon the journey down. The sloughing ward at once became a horrid scene; every sore in the house assumed a malignant character; and the deaths increased in nearly a threefold proportion.

Our knowledge of the origin of contagions is altogether extremely limited; I shall, therefore, offer no remarks upon the subject of that under consideration here, as I propose to confine myself solely to practical facts. These were observed at the bedside of many hundred patients; and, without any reference to systematic arrangement, I shall describe them from my notes upon the subject, and as they struck me upon the spot.

Let us suppose that our wounded have all been going on well for several days, when suddenly one of our most promising patients complains of severe pain in his head and eyes, a particular tightness about the forehead, want of sleep, and loss of appetite; and that these feelings are accompanied with quickness of pulse, and other symptoms of fever: his wound, which had been healthy and granulating, at once becomes tumid, dry, and painful, losing its florid colour, and assuming a dry and glossy coat. This is a description of the first stage of the hospital gangrene. And if a brisk emetic be now exhibited, a surgeon, not aware of the disease that was about to form, would be astonished at the amelioration of the sore, and the unusual quantity of bile and of indigested matter evacuated by vomiting. In many cases, and particularly if the ward be well ventilated and not over crowded, nothing more need be done, except to change the patient to another room; or, if that be not practicable, to remove his bed from the place where it stood, particularly if it be in a close corner of the ward, and not raised from the floor by boards and tressels; and ordering him an entire change of bedding: while, at the same time, he is well washed with tepid water. If, however, this incipient stage be overlooked, the febrile symptoms very soon become aggravated. The skin around the sore assumes a highly florid colour, which shortly becomes darker, then blueish, and at last black, with a disposition to vesicate; while the rest of the limb betrays a tendency to œdema. All these threatening appearances occur within twenty-four hours; and, at this period also, the wound, particularly if it be situated on a muscular part, as the thigh, buttock, or calf of the leg, whatever may have been its original *shape*, soon assumes *the circular form*. The sore now acquires hard prominent ragged edges, giving it a cup-like appearance, with particular points of the lip of a dirty-yellow hue, while the bottom of the cavity is lined with a flabby blackish slough.

This rapid progress, and the circular form of the ulcer, are

highly characteristic of hospital gangrene, and obtain, almost universally, in every wound infected with it, wherever situated. I have seen the external ear in this manner destroyed, as if in a series of concentric circles, and the same occur during the destruction of the palpebræ. Even upon surfaces barely contiguous, as the fingers and toes, it generally spreads in a similar manner; so that the sore, which may have been on the middle finger, or toe, and confined entirely to it at the morning dressing, by night engages the adjoining sound ones, and, in less than twelve hours more, embraces the whole foot, or hand. The originally affected spot is always the centre of this wide-spreading diseased circle. On the ribs also, or over the interdigitations of the serrati muscles, the surface of the wound preserves the circular form, although the bottom be irregular or angular. The discharge in this second stage becomes dark-coloured and fœtid; and the pain is extremely poignant.

The gangrene still advancing, fresh sloughs are rapidly formed, the increasing cup-like cavity is filled up and over-topped by them, and the erysipelatous livor and vesication of the surrounding skin gain ground; while chains of inflamed lymphatics can be traced to the adjoining glands, there exciting inflammation and suppuration, which often furnish a new nidus for gangrene. The face of the sufferer assumes a ghastly, anxious appearance; his eyes become haggard, and deeply tinged with bile; his tongue is loaded with a brown or blackish fur; his appetite entirely fails him; and his pulse is considerably sunk in strength, and proportionably accelerated. In this stage, the weakness and irritability of the patient are such, that the slightest change of posture, or the most delicate examination of the sore, puts him to torture, increased by his inability to steady the limb; which, if moved at all from the bed, is seized with tremors and spasmodic twitches. I have never, however, seen this spasmodic affection increase to tetanus in any one instance of the many hundreds which I have seen; and I have been almost tempted to imagine the two diseases incompatible. When these nervous affections come on, the bravest soldier betrays a symptom, which, in those of less strength of mind, forms a striking feature in every stage of the disease; viz. the greatest imaginable impatience of pain and depression of spirits. Men, who have borne amputation without a groan, shrink at the washing of their sores; and shudder at the sight of a dead comrade, or even on hearing the report of his death, instantly predicting their own dissolution, and sinking into sullen despair. I have never in one single instance seen this symptom wanting; and I am therefore led to suppose, that those practitioners, who assert that they have seen whole muscles, nay limbs, come away without pain, must have mis-

taken the nature of the disease they witnessed, or have seen hospital gangrene in its chronic state, when large sloughs were separating, after the disease had subsided.

The third and last stage is now fast approaching: the surface of the sore is constantly covered with a bloody oozing; and, on lifting up the edge of the flabby slough, the probe is tinged with dark-coloured grumous blood, with which also its track becomes immediately filled. Repeated and copious venous bleedings now come on, which rapidly sink the patient. The sloughs, whether falling off spontaneously or detached by art, are quickly succeeded by others; and discover, on their removal, small thickly studded specks of arterial blood. At length an artery springs, which, in the attempt to secure it, most probably bursts under the ligature. The tourniquet, or other pressure, is now applied; but in vain: for, while it checks the bleeding, it accelerates the death of the limb, which becomes frightfully swelled and horribly fœtid. Incessant retchings soon come on; and with coma, involuntary stools, and hiccough close the scene. Often, however, the patient will survive this acute state of the disease, and sink under severe irritation, absorption of putrid matter, and extensive loss of substance, without any other symptoms than those of hectic fever arising from other sources.

While the acute symptoms, as above described, were proceeding in one part of the hospital, the same appearance began to spread through another at a distance; for immediate contact, though highly dangerous, is by no means necessary toward the propagation of this most insidious disease. The stumps which have been nearly healed, catch the morbid disposition; those, where healing by the first intention is reasonably to be looked for, open, retort their edges, put on an erysipelatous appearance, and, at last, bursting up altogether, present a frightful cup-like excavation, edged with the true characteristic circular lip. The slighest scratch of the dissecting knife festers; ulcers, whether simple or constitutional, become gangrenous; wounds long healed break up, and fall into a state of foul suppuration; nay, the skin, although perfectly sound, which has been touched with a sponge employed in washing the gangrenous sores, ulcerates, and soon becomes itself a slough. This is often observable among the *orderlies* and *nurses*. It is not, however, a long residence in the tainted air that predisposes to the reception of the contagion; as I have seen illustrated in the case of a soldier of the Royal Waggon Train. This poor fellow, who had just landed from England, and was under the influence of mercury employed for a venereal complaint, died within forty-eight hours after his admission; the gangrene having seized on an open bubo in his groin, eroding the great vessels in the

neighbourhood, and absolutely destroying the abdominal parietes to a large extent.

In this distressing state of our hospital, some few constitutions resisted the febrile affection altogether. Some had extensive local disease, without any general affection. Those cases, however, I have principally observed to occur from the inoculated slough, among the attendants who occasionally respired a purer air than the patients; and among the assistants, whose accidental scratches were best treated by destroying the parts with the nitrate of silver. I have, moreover, seen, among the servants and washerwomen, the febrile symptoms without any local affection; and this was clearly traced to washing the bandages and dresses. These cases readily yielded to proper remedies.

Such were the symptoms which characterized the hospital gangrene at Bilbaô, one of the most subtle and destructive poisons that ever infested an hospital; attacking equally the most robust and most debilitated; and, if unchecked by medical aid, proceeding invariably to a fatal termination. Its existence in any situation fortunately cannot be long overlooked; for, to those who have once seen it, a glance at the sore, or even the smell of the ward, will immediately discover it. It can scarcely be confounded with any other disease, or any species of ulcer. It may, indeed, be mistaken by name, (and I have seen this happen,) for common gangrene; but the points of difference are very striking. It does not proceed from impaired organization of the parts; nor is it necessarily preceded by inflammation, cold, or pressure: its progress is infinitely more rapid; and when its course is checked, separation takes place in detached specks, instead of the *waving line.* It is also often attended with hæmorrhage, which rarely occurs in common gangrene. The two diseases, indeed, are frequently coexistent; and I have seen numerous instances of the lower part of a limb gangrenous from pressure, while a sore highly infected with hospital gangrene has occupied the upper part. To those who have seen such cases, or have had opportunities of comparing the difference of appearances of the diseased parts in two individuals, the diagnosis can never be difficult.

The skin and cellular substance, whether loose or condensed, seem to be the parts originally and principally affected by hospital gangrene. This is obvious even in the living body; but on dissection, the disease of these parts frequently appear to have spread much further than external appearances would at all warrant us *a priori* in concluding, as we often find a diseased track running up into the groin or axilla, and completely dissecting the muscles and great vessels. This is, indeed, sometimes obvious during life; for on the casting off of the sloughs,

the muscles will appear as perfectly disengaged as the most accurate knife could render them; at the same time they will, for a long period, retain their florid colour, and preserve their action. In very violent cases, however, the muscles partake of the disease; and either slough off in successive layers, or become converted into a flabby mass.

The thoracic and abdominal viscera do not appear to suffer peculiarly while the gangrene occupies the extremities; but where the ribs or abdominal parietes have been the seat of disease, I have occasionally observed that the viscus, which corresponded in situation with the external sore, took on a diseased appearance. I have seen the lungs in two cases, and the pericardium in the third, covered with gangrenous spots; and I have often observed the same appearance on the liver; but I have never traced any thing of the kind on the membranes of the brain.

The bones, in some instances, resist the contagion for a long time; either exhibiting no morbid appearance whatever, or barely throwing off a thin scale. In other cases, however, particularly where the ribs, sternum, or cranium are denuded, they become carious throughout, and slough away like the soft parts; and the caries assumes the circular form, in strict correspondence with the shape of the soft parts. In some cases a total absorption of the phosphate of lime takes place, and the bone is converted into a cartilaginous mass. This circumstance I have met with twice: once in a diseased metacarpal bone, and once in the femor. In the former case the dissecting knife cut through the bone with as little difficulty as if it had gone through the cartilages of the ribs. The latter case was very remarkable; the patient suffered acute torture from a sloughing thigh stump, which, on an accurate examination, displayed the following appearances:—A thickened cutaneous texture hanging in a loose pouch, around a hard projecting mass, apparently consisting of diseased muscle, within which, corresponding to the situation of the bone, appeared a tough, dark mass, exquisitely sensible. It had been touched with escharotics, and lay loosely; and, on removal by a forceps, had all the external appearance of a piece of cartilage, about two inches in length. On examining the spot more closely, the whole of the parts contained within the diseased skin appeared of the same nature; and the disease seemed to spread up to the trochanter. The patient had been affected only fourteen days; and for the last four the disease appeared stationary. An operation was resolved on, which I performed, by first taking up the femoral artery immediately under the ligament; and then, cutting as deep an inverted cone as I possibly could, I sawed off the bone immediately below the trochanter. On examining the amputated por-

tion of the limb, the whole mass, with the exception of the skin, was found to be cartilaginous, retaining the shape of an enlarged bone; but not the smallest trace of osseous matter. The tube of thickened periosteum, in which it lay, alone exhibited a few detached specks of ossification. The operation succeeded, and the patient embarked for Passages in six weeks.

The blood vessels are as variously affected as the bones. In some rare cases, I have seen the femoral and axillary artery pulsating awfully and apparently unaffected with disease, while all the surrounding parts were completely destroyed. But in a vast majority of cases, the blood-vessels partake of the general disease in which they are embedded. They are not only completely separated from their natural connections, but their coats slough away at the immediate point of disease; while the disposition extends far beyond the apparently affected spot. Hence our ligatures but too often fail on the main branches, and any attempt on the capillaries is invariably injurious. We would here be naturally induced to tie the artery considerably above the seat of the disease; and this I have done, once on the femoral and twice on the axillary artery. The former burst on the third, each of the latter on the second day afterwards. These ligatures were applied no doubt in the height of the gangrene, when all operations are hazardous. In general, the great vessels slough long after the acute symptoms of the disease abate; in dangerous cases, under such circumstances, we always dreaded the eleventh day of the disease.

The state of the vessels was well illustrated by the following experiment: During the performance of an operation on the middle of the humerus, every preparation was made for the injection of the limb; immediately on its separation, a pipe was fixed into the brachial artery, and a coarse tallow injection, blood-warm, was slowly thrown in. The gangrenous cup, which occupied the bellies of the flexor muscles, and extended down towards the wrist and palm of the hand, was immediately filled with the injection, which oozed from every point of the surface, while the main artery totally gave way.

I lament extremely, that the unrelenting and superstitious conduct of the Spanish authorities has deprived me of an interesting collection of preparations illustrative of the diseased appearances produced by hospital gangrene on the various parts of the body. The British merchant, in whose house they were deposited, narrowly escaped a prosecution for murder, and the preparations were buried after exorcisms and lustration with holy water*!

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* Much to the honour of Sir James McGregor, dissections were encouraged at the various hospital stations on the Peninsula. By

In the treatment of the hospital gangrene, although the ulceration might, to a superficial observer, seem to claim the first notice, yet it was to the constitutional treatment that we paid particular attention. We regarded external applications, notwithstanding an obvious change of type in the accompanying fever, as merely a secondary object; and in truth I must confess, that I viewed them as operating more by the cleanliness and attention to the patient, which their frequent application implied, than by any intrinsic value they possessed.

In every case of the disease, on the first invasion, as well as on occasions of threatened relapse, the *primæ viæ* were cleansed by full emetics, followed by purgatives; and the state of the bowels and skin was carefully attended to throughout its whole progress. On the supervention of typhoid symptoms, which, during the months of August and September, very early made their appearance, the cure was conducted on the same principles as guided us in the treatment of pure typhus, administering in the latter stages opium in large doses, aided by a nutritious diet and a liberal allowance of the best wine we could procure. Bark, in decoction was for some time much and largely employed; but I have seen great harm done by large and injudicious doses of this drug, before full evacuations had taken place, and the sloughs began to separate. I need scarcely say, that a remedy so strongly recommended as venesection, had early occupied our attention; but previous to the month of October, the obviously typhoid type of the disease made us extremely averse from employing it. At that period however, a change in the weather, from sultry to cold, and even frost, (at nights), took place; marked by a corresponding change in the thermometer, which, at its medium range, was 20° lower than in the preceding months. It progressively sunk during the winter to the freezing point, while severe and long continued gales of wind from the south and south-west, accompanied with constant mists and thick fogs, prevailed. Catarr-

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the exertions also of Dr. C. Forbes, Principal Medical Officer, a most convenient set of apartments, for anatomical and surgical lectures and conversations, were fitted up; a circumstance which will long be remembered by those who acted under him at Bilbaô. To my able friend and colleague Staff-Surgeon Boggie, and to my excellent assistants Messrs. Hume, Crofton, Dethick, and Fenton, I owe many obligations: to the former of those gentlemen, indeed, whose zeal, intelligence, and personal exertions I can never sufficiently appreciate, much more than the bare thanks of an individual is due. The other gentlemen were successively entrusted with the care of the gangrenous cases, and almost exclusively conducted the business of the dissecting room and of the operations at the *Cordeleria*.

hal complaints became very prevalent, and a general inflammatory diathesis was apparent throughout the hospital. But what more than all convinced us of the change of type, and pressed on our consideration the propriety of blood-letting, was, that the hæmorrhages, which formerly sunk the patients' strength, were now accompanied with obvious relief. The greatest caution was therefore used in the administration of wine and opium. The doses of the latter, which in some of the more severe cases had been extended to three and four grains in twenty-four hours, was now gradually diminished to a bare anodyne at night; and the wine was changed from port to *vin du paye*, with a diminution also of its quantity; while spirits, which had occasionally been allowed, were entirely prohibited. In short, a moderately antiphlogistic regimen was universally adopted.

A favourable case for venesection at length presented itself; the result was strikingly advantageous, and the practice became general. Indeed the very patients themselves emplored the use of the lancet; and from that period to March following, we used no other remedy, either as a cure or preventive. If it were neglected, on the appearance of an inflamed ring around a sore, attended with violent throbbing pain and a foul bottom, smeared with unhealthy pus: or if in a suspicious stump already healed, redness, pain, tension, and bounding pulse occurred, gangrene assuredly took place, if full and early blood-letting was not employed. Much to our surprise, we never observed any of the lancet wounds assume a gangrenous appearance, although in almost every other instance the slightest puncture festered.

In the local treatment, a great variety of methods was pursued; an enumeration of them would embrace almost all that have been proposed by authors. Some, which agreed for a day or two, became either inert or hurtful at the end of that period; and we were at length guided in their use by the effects which they seemed to produce. In general, however, the sores were covered with a large fermenting poultice; and if there were great tension and inflammation of the limb, cloths dipped in saturated solutions were applied. The more irritable sores were dressed with lint moistened with tinct. opii, or camphor dissolved in oil, or a paste of camphor and opium. Where the fœtor was very great, levigated charcoal, either alone or mixed with bark or camphor, was employed. An application also from which we derived some assistance was diluted nitric or citric acid.

The French surgeons used to apply hot fomentations of wallnut leaves to the sores, and then sprinkle them with powdered nitrate of silver; but I observed no better effects from

this, than from any other external application; and indeed I never observed decidedly bad consequences from any, except hot burning oils and nitre; the application of which, particularly of the latter, produced the most exquisite torture without any corresponding advantage. Whatever dressings were employed, the utmost attention was paid to the removal of all filth, by the repeated washing with tepid water. The sores, during the whole time of dressing, were exposed to the fumes of nitrous acid gas, which was also constantly diffused through the wards. The walls, roof, and floors of the sloughing wards were daily white-washed. The same cloth or bandage was never used a second time without washing; and the sponge, or tow, (which is much preferable,) employed in cleansing the sores, an operation generally performed two or three times in the twenty-four hours, was immediately destroyed, to prevent all chance of inoculation; which, in a large hospital, is frequently effected in spite of the best precautions.

When our endeavours began to be attended with success, the febrile symptoms began also to abate, and small florid specks about the fifth or seventh day appeared to break through the black sloughs. The edges of the circle lost their retorted and tumid appearance; and the looks and spirits of the poor sufferers considerably improved. The sloughs soon began to loosen; and at this stage I think the use of powdered rhubarb externally was attended with beneficial effects, and assisted much in cleansing the sores. In some cases however, the sloughs were amazingly tenaceous, and required a strong solution of lunar caustic. It is in those cases, that the diluted solution of arsenic, first I believe used by my friend Mr. McCaull at *Estremor* in 1812, and looked upon as a specific by some, will be found very serviceable in cleansing the sores; but whatever is used, no violence should be employed. A much more important object than the separation of the sloughs, will be the removal of the patient to an airy and separate ward, as no disease is more apt to recur than this. I have seen a case, in which, in spite of our utmost endeavours, the wretched patient suffered thirteen successive relapses, and at last sunk under the violence of the repeated attacks*.

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* Relapses will occur from the slightest local irritation or error of diet, and sometimes without any apparent cause whatever, and at a period when cicatrisation was rapidly going on; they will also at times occur without any increase of fever, a small livid or red spot covered with a glairy tenaceous, purulent matter suddenly making its appearance, and, however frequently destroyed, still continuing to increase, until at last the whole sore again assumes the

Hæmorrhage frequently occurs about the period of the separation of the sloughs. It is best restrained by pressure with a sponge or compress dipped in oleum terebinthinæ. Where the main artery gives way, amputation, as high up as possible, is our only chance of saving life. Indeed this dreadful alternative is in a great majority of cases rendered indispensable, not from hæmorrhage alone, but from the extensive loss of substance, which causes destruction of the joints, and from other sequelæ of the gangrene.

The question of amputation, however it may be agitated in cases of common mortification, can, I apprehend, admit of but little doubt here. Instances will frequently occur in military practice, where the line of separation need not or ought not to be waited for; but the phenomena of the disease and the appearances on dissection, have forcibly impressed upon my mind the impropriety of attempting to operate before the fever has abated, and the sloughs begin naturally to detach themselves. A contrary practice has, I know, been advocated; but it was never followed in the *Cordeleria;* and I can safely say, that no patient, among the vast numbers treated there, ever suffered the smallest injury from the delay.

To give the operation every chance of success, the patients should be removed to a separate and airy ward; and, where it can conveniently be done, encamped or hutted. In the operation, the skin should be detached as little as possible from the subjacent muscles, and we need not be too curious in taking up every small vessel; gentle pressure, or dossils of lint dipped in ol: terebinth. will answer every purpose. We latterly adopted a plan, which I conceive to be a very great improvement in the management of ligatures. It was suggested by Mr. Hume, from the report of an American surgeon. It is to cut both ligatures quite short, and apply the lips of the wound over them. The smallest possible extraneous matter is thus left to produce irritation; for, on the natural casting off, a small particle only forms near the mouth of the artery, on pressing which the little circle of silk floats out. This however happens principally in favourable cases, where adhesion has early taken place. In others they come away with the dressings. Although this mode was adopted in thirty-four different cases, yet, I never observed any ill effects nor inconvenience from the plan.

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sloughing state. This was the case in the instance of poor Dudley, of the 88th regiment, alluded to in the text: he bore his sufferings with unparalleled fortitude, and his fate excited universal sympathy throughout the hospital.

In the above observations I have rigidly confined myself to what came under my own eye at Bilbaô, without at all entering into the peculiar practice or proposals of authors upon the subject. The great diversity of opinion which has prevailed, will be seen by reference to the works of our own and the French surgeons; but I apprehend a great source of their discordance has been a neglect of the peculiar type of the accompanying fever, which doubtless depends much on climate and the season of the year: for, with us, the greater number and more fatal cases occurred in the hot months; and in March, when the weather was the most inclement within the memory of man in that part of Europe, with twenty days of incessant snow, hail, and rain, not one fresh case occurred*.

December 1814.

II.

A Case of a Cartilaginous Substance removed from the Knee-joint.
By William Williams, Llandovery, South Wales, Member of the Royal College of Surgeons in London.

On the 11th of November 1812, a farmer, residing in the parish of Llanthoysaint, brought his servant-boy, aged sixteen, to obtain my opinion upon an affection of the knee-joint.

Upon examining the left knee, I could easily feel a hard substance within the cavity of the joint, perfectly loose and unconnected. This circumstance I was able to ascertain from the substance eluding my grasp, and passing with facility under the patella from one side of the joint to the other.

The boy stated that the disease had been coming on for many years, and till of late was confined to one side of the patella; and that as long as the substance remained immoveable, it produced but little or no uneasiness; but that since it began to move through the joint, it occasionally lodged in certain situations, and produced very severe pain. This frequently occurred when the joint was in motion, as in the act of walking or running.

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* I intended to have annexed to this paper a complete table of mortality; shewing the number of wounds treated, the number attacked with gangrene, and the number of fatal cases from that disorder: and it is with great regret that I here discovered, that the connected tables, as sent to head-quarters of the army, (copies of which are still, no doubt, in Sir James McGregor's possession,) were sacrificed along with my preparations.

The knee presented no marks of disease externally; the colour, temperature, and size were perfectly natural. I did not hesitate to give an opinion of the nature of the case; every mark of the existence of a cartilaginous substance within the capsular ligament of the joint being obvious.

My patient being a strong and healthy subject, I made no scruple in recommending the removal of the substance, by an opening made into the articulation. This proposal the lad, without any reluctance, complied with. Conscious of the caution with which this step is recommended by authors on the subject, and having myself witnessed the extensive inflammation sometimes consequent to wounds penetrating articular cavities, I endeavoured to guard against such symptoms, by enjoining perfect rest for three or four days previous to the operation, with some aperient medicines, and a saturine lotion to be constantly applied to the joint.

The necessity of these prophylactic measures being explained, I dismissed my patient, who lived about eight miles in the country, promising to follow him, and have the operation performed as soon as I should judge that the means prescribed had time to produce their proper effect.

On the 16th I performed the operation. The patient being seated on a firm table, with a person sitting behind to support his head, and a pillow placed under the knee, I conducted the extraneous substance so as to rest on the anterior part of the internal condyle of the os femoris, and directed my assistant to place his fingers so as to prevent its slipping backwards between the ends of the bones; I then bent the leg nearly at a right angle with the femor: this position, by extending the ligaments on the anterior part of the joint, gave a degree of steadiness to the extraneous body. Drawing the integuments to one side with my left hand, in order that they might cover the opening in the capsular ligament after the operation, as recommended by Mr. Abernethy, I made a longitudinal incision of about an inch in length, and so deep, that the loose cartilage became at once exposed; then, fixing a tenaculum in it, I succeeded in extracting it without any difficulty. I immediately brought the lips of the wound together, and applied strips of adhesive plaister to retain them in contact, securing the whole with the eighteen-tailed bandage, which I thought the most convenient kind of bandage, in case inflammation should ensue.

The patient was now conveyed to bed; the leg was rested on a pillow in a state of half flexion, in a position similar to that recommended by Mr. Pott for fractures of the lower extremities; and after urging the necessity of perfect rest till I should see him again, I took my leave.

On removing the dressings the third day after the opera-

tion, I was agreeably surprised to find the lips of the wound completely agglutinated without the least mark of local inflammation; neither was the system any way disturbed. In about a week after this, he was allowed to walk, and has *never* since felt any uneasiness in the joint.

The substance extracted was similar to a cartilage in its structure, about the magnitude of a common bean, with one side convex, smooth and polished; the opposite side nearly flat, softer, and rather ragged.

During the time it had been confined to one side of the joint, there is reason to suppose, that it was attached to that side of the articular cavity by a pedicle, through which it must have been nourished; for the boy said he had observed, that it continued to increase in magnitude no longer than while it was confined to the same place; when it acquired a certain size, the pedicle (perhaps by an accidental movement of the articulation to a greater extent than usual) was lacerated, leaving the substance loose and unconfined. The boy's mother, who was present at the operation, had a similar complaint in her left knee. She stated that she was upwards of forty years of age when it commenced, and having endured it so long, (being now turned of sixty,) she was determined, to use her own expression, "to carry it in her knee to the grave." She added, that *her mother*, (the boy's grandmother,) for many years before her death, which happened at an advanced age, was afflicted with a similar disease.

How far the fact of the existence of this morbid phenomenon in *three* successive generations may tend to prove it to be *hereditary;* and how far the success attending the operation in this case, may justify the adoption of the same measure in similar instances, future observation and experience can alone determine.

December 1814.

III.

Observations on a Disease of the Gland which secretes the Nail.

By Caleb Burrell Rose, Surgeon, &c. of Eye, Suffolk.

I have recently had under my care two cases of a disease, which I think is but little known. I have ventured to denominate it *a disease of the Gland which secretes the Nail.* One appeared on the great toe, the other on the thumb. The disease, from the time it was first observed by both patients, to the period when they consulted me, had existed several months; and was first noticed by occasioning considerable pain of the part when pressed. On examination, a horny excresence

of an oval form, about the size of a grain of wheat, was seen rising from under the corner of the extremity of the nail, which appeared somewhat elevated, in a direction from the excrescence to the root. The appearance of the surrounding integuments remained unaltered; but pressure on the part gave acute pain, which did not entirely cease on the pressure being removed. The patient who had the disease in the thumb, complained of an almost constant aching of the whole arm. If the excrescence be treated as a corn, and all pressure removed from it, the patient feels very little inconvenience; but the horny tumour continues to increase, and has a very irregular form and uneven surface, is completely insensible, and, on paring it away, appears to extend to the part where the internal surface of the nail ceases to be attached to the cutis beneath.

Not having seen or heard of a disease similar to this, I did not know what method of treatment to adopt; therefore, in the first case, (which was of the toe,) I merely attempted to give my patient temporary alleviation, by applying strips of adhesive plaister round the part to prevent pressure. I examined some of the ancient and modern authors on surgery, with the hope of meeting with a description of the disease, and its method of cure; but I searched in vain, and found nothing that appeared in the slightest degree analogous to it.

Reflecting on the nature of the disease in question, it struck me, that the exuberance must be formed by the morbid enlargement of a part of the gland at the root of the nail. When this gland has reached the part where the adhesion of the nail to the cutis ceases, its surface is no longer covered either by cutis or cuticle; and it then pours out its diseased secretion, which forms a horny crust over the part. I feel more disposed to adopt this opinion from the following case.—A boy cut off the end of his finger just below the integument which covered the root of the nail, so as to expose its gland. The wound cicatrized to the circumference of the gland, which appeared convex, and of the size and form of a small split pea; over it the cutis did not extend, and it continued bare for nearly three weeks, having a bright red even surface, with very little sensibility. From this time a horny, tough, and dark-coloured crust began to be formed on it, which was completed in a week. Thus it appears, that the gland which secretes the nail, can secrete a similar substance from any part at least of its upper surface.

Impressed with this idea of the nature of the disease, I thought by destroying the gland, or that part of it which had taken on the morbid action, I should prevent a return of the disease. To effect this purpose, I pared all the inorganic substance away; and then touched the sensible surface with

argenti nitras. This application was repeated every three or our days; and after a few weeks, the part was nearly reduced, and the patient thinking it well, left the neighbourhood: but he has again returned; and at this time (several months after the application of the caustic) feels very little pain, and hardly any inconvenience from the toe, except when forcibly pressed on. A small portion of the excrescence has again appeared.

In the other case, I at first pursued the same method of treatment; but finding the destruction of the part go on very slowly, I applied a piece of lint moistened with some deliquesced kali purum, which produced a deep eschar, and rendered the cure much less tedious. As soon as the slough began to loosen about the edges, I dissected the whole of it off. In a few days healthy granulations made their appearance, and the part cicatrized before the granulations had risen to a level with the surrounding skin. It is four months since the part healed, and the disease has not returned; the part is not at all tender, and the pain is completely gone.

I am doubtful whether or not I have formed a correct opinion of the nature of the disease; and much wish for further information respecting it. With this view I have laid the preceding detail before the public, and have hazarded an opinion which may be incorrect*.

November, 1814.

IV.

Observations on Herpes Præputialis. By John Roberts, Apothecary, &c. London.

On perusing a communication on herpes præputialis, in a late number of the *Repository*, I was much pleased to find the ideas of the writer coincide with my own, in respect to the cause and disposition towards that troublesome disease; more particularly as I have been successful in preventing a recurrence of that complaint in two instances, by considering it produced by a siccity, or morbid and defective state of the secretion of the part. The disease has been so well described by Dr. Bateman, and again so fully in the paper alluded to, that a repetition would be entirely superfluous; and it is so evidently marked,

* Nitric acid probably would be a useful application in this case, as being a powerful solvent of horny substances. Our correspondent will receive useful information on diseases of the cuticle, from a paper by Professor Carlisle, (*Medical Facts and Observations*, vol. ii. p. 29); and from the fifth volume of the *Medico-Chirurgical Transactions*, an analysis of which is given in this Journal.—Editors.

that I should deem it scarcely possible for a person of common discrimination to mistake it for chancre, after a description of it has been read, or the disease once seen. I shall therefore briefly relate those circumstances only which are interesting, by being new, and tending, perhaps, to introduce a remedy to prevent the return of an irksome and (when existing in the married state) a distressing disease.

A gentleman applied to me on account of herpes præputialis upon the interior part of the prepuce, in February 1813, between which period and January 1814, he experienced eight attacks of the disease, the curative process of each occupying, upon an average, about ten days. When this was effected the eighth time, I was induced to try the application of a strip of oiled silk around the penis and under the prepuce, with a view of promoting the secretion of the part, and keeping it in a moistened state; and with a hope of thereby preventing a recurrence of the disease. The success was so far complete, that he has not since had a return of the complaint. Supposing this might have been an adventitious occurrence, I did not consider myself justified in relating a solitary case as a proof of the success of the application; but having found it equally beneficial in a second instance, where the disease had returned twice, at intervals of five and six weeks: and five months having now passed since the last appearance, I beg to direct the attention of your numerous readers to the above facts, as it cannot appear probable that the cessation of the disease, in both cases, should have been purely accidental.

November 14, 1814.

V.

Observations on the Cæsarean Operation. By David Plenderleath, M.D. Reading.

In the Edinburgh Medical and Surgical Journal for April 1803, there is a case recorded by Dr. Chisholm, of the Cæsarean Operation having been performed twice upon the same subject, by Monsieur D'Ariste, a practitioner in Martinique; which case appeared of such consequence, that a paper relative to it was printed and distributed over the island by the order of the Captain-General, Villairet Joyeuse.

I had, however, entertained doubts of the accuracy of the statement, from the circumstance of the operation having so seldom succeeded to preserve the mother, when only once performed on the same subject; and likewise from the extreme improbability of a woman subjecting herself again to an increase of family, knowing that the same dreadful operation, in case of pregnancy, would inevitably be resorted to.

Other practitioners, likewise, looked upon the above account as fabulous. I was, therefore, well pleased to find the statement correct, by the evidence of General Villairet Joyeuse's brother, who was taken prisoner at Martinique, and resided till lately in this town; and who knew the woman perfectly well. But to strengthen the testimony still further, I have that of Monsieur D'Ariste's two sons, whom I have lately seen, and who confirm the statement in every particular. The first child lived; the second was brought alive into the world, but soon after died. The woman continued to cohabit with her husband, but without any further increase of family. The case was reported to Buonaparte, who invested Monsieur D'Ariste with the Order of Merit.

Dr. Blegborough, in an interesting communication*, asserts that, "in his opinion, no circumstance can occur, that will justify the cæsarean operation." This opinion, coming from so respectable a practitioner, and being disseminated throughout the island, may have the effect of consigning to the grave some whose lives might otherwise be saved.

It is admitted that the operation need not be resorted to, where the space between the pubes and sacrum, or on either side, exceeds one inch and a half; but instances occur where the malconformation is so great, that the largest conjugate diameter shall not measure much more than one inch. In such a case, what is to be done? If the operation be not performed, both mother and child must inevitably perish; if it be performed, there is a probability that both may be preserved, and very strong evidence that, at least, one life may be saved. Of the eighteen cases operated upon in this country, one only has been attended with success to the mother; ten children have, however, been rescued from destruction; a proportion far from inconsiderable. On the Continent, however, the success of the operation is recorded to be great, as, out of 231 cases, 139 have been said to be successful.

With regard to trusting the event to inflammation and abscess, it is a practice, I think, highly to be condemned, and the cases of its success upon record are far from being satisfactory.

Where, therefore, the distortion of the pelvis is so great as that the short diameter shall not measure more than an inch and three quarters, and nearly three inches in length, every practitioner should consider himself bound by that moral obligation which is derived from the evidence of recorded cases, to give his patient and her child their only chance of life, by performing an operation which is more terrible in name than in reality.

December, 1814.

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* Vide *Repository*, vol. ii. p. 361.

VI.

A Letter from Dr. Robert Watt *to the Editors, on a Report on Vaccination* ; with their Observations in reply.*

I was pleased with the zealous and candid manner in which you entered on the investigation of the late extraordinary increase of deaths by measles. In the third number of your publication you state, that "with a view to draw the attention of practitioners to this *important question*, you had given the return of deaths from measles in the bills of mortality." This was proceeding in the direct way in which the question must ultimately be settled. I was not a little surprised, therefore, to see, by your last Number, (January), that not only the returns, but, in fact, that the whole investigation was given up, and that you considered the matter as for ever decided against the hypotheses which I had formed†. Now I would ask, what have you done to set the matter at rest? What have you done to enable you "confidently to conclude that Dr. Watt's inferences, as far as regards *every part* of Great Britain, except Glasgow, are erroneous?" Nay, more: "from sources much more extensive than we possess, we have the satisfaction of finding that they are completely refuted‡."

With regard to the last of these, I cannot even form a conjecture; for I cannot conceive how there should be any sources of information, respecting a question of this kind, which you could think yourselves under any obligation to conceal. With regard to the first, you have given the return of deaths for ten months. And what do these returns amount to? Why, that 550 have died of measles in that time. And it appears from the General Bill of Mortality that not less than 817 died within the year. Now, if you reflect that this is nearly *five times* the average of deaths from that disease during the whole of the last century, it is not easy to conceive how you should so *confidently* conclude, that it refutes the conclusions drawn from the Glasgow bills of mortality. The deaths by measles in London last year amount to more than 41 in each thousand; whereas, on an average of the last century, they amount to only 8.7. (A)

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* Vide *Repository*, vol. iii. p. 36.

† In May you remarked, that "measles are most epidemic," (twenty-three having died in April,) and therefore "it is a fit occasion" to ascertain how far "the observations which Dr. Watt has made on the increased fatality of the measles in Glasgow, apply to the metropolis." *Repository*, vol. i. p. 449. In December, when I suppose ten times that number must have died of the disease, you judge it a *fit occasion* to give up the investigation!

‡ *Repository*, vol. iii. p. 40.

But you will say "look at the tables we have published, and there you will see that only 37 out of 36,773 cases have died of measles." I shall not dispute the accuracy of these returns; but you will certainly permit me to say, that as they give only a *one and twentieth* part of the deaths in London, and that for only *thirteen months*, you cannot surely, on rational principles of induction, draw any very sweeping conclusions from such slender premises. You may boast that you have given nearly 37,000 cases; but remember that you have only given 1066 deaths. Now what is this to the Glasgow tables, where you have the proportion of measles in no less than 54,482 deaths, and these not confined to a period of thirteen months, but extending to the space of thirty years? Permit me to add, that, if only as small a proportion of deaths had occurred to other practitioners as appears from your returns, nearly the whole population of London, and its numerous suburbs, must have been sick, to have produced such a bill at the end of the year. The account must have stood thus—1,066, 37,000—19,783, 686,557. At this rate it must have been a golden year for the profession. (B)

But to be serious: the only thing which has been done at all on the plan which I have followed, is in the supplement to a paper by Sir Gilbert Blane, in the fourth volume of the Medico-Chirurgical Transactions; a very short abstract by Dr. Henry of Manchester, in the fourth volume of the same work; and your own monthly statements from the London Bills of Mortality. I can lay no stress on individual opinions or experience; for I can find no uniformity in them. One gentleman, who has been in extensive practice for thirty years, tells me that he has not lost in that time ten patients by measles! another, also extensively employed, tells me that in five months he lost fifteen! These may be considered as the extremes, and I have had reports of every grade between them. But my conclusions are drawn from the records of the dead, and not from the opinions, experience, and glossings of the living; consequently, while you talk of the one and I of the other, it is not surprising that our conclusions should be as widely different as they are. I think it quite unnecessary, therefore, to attempt any refutation of the individual opinions and statements to which you have referred. Can any of these be compared to the general result of the London bills for more than a century; or to the bills of the second city in the island (in point of population), for thirty years? (C)

As it was never my intention or wish to add to the strength of the Antivaccinists, I have purposely abstained from noticing many reflections which I have seen thrown out by different periodical writers, and would not now have addressed you, had your present conduct not been so very different from what I

expected, and from what I conceived to be your duty as impartial inquirers after truth. (D) You seem to think, that if my positions are admitted, the cause of vaccination is ruined. Now I can see no connection whatever between these two results; and even were it the case, ought that to be a reason for suppressing the truth. In Glasgow, the fact is well known, and generally admitted, that measles have become greatly more fatal of late, and yet I never heard this assigned as a reason for declining vaccination*. If the tables shew that some other disorders have been more fatal since vaccination was introduced, they at the same time shew the sovereign efficacy of that practice in eradicating one of the most disgusting and fatal maladies to which human nature has been subjected, and this was all for which the keenest advocates for the cow-pox ever contended. (E)

Though I have thought it a duty I owed to myself to trouble you with these few remarks, I leave it entirely to your own candour and discretion either to give them a place in your Journal or not, as you may feel disposed. All I request is, that you either publish the letter entire, or take no notice of it. The truth will ultimately prevail; if it turn out otherwise than I have conjectured, I shall feel no difficulty in retracting my ideas; if it shall turn out as I have been led to conclude, it brings to view a hitherto-undiscovered and very singular law in the human constitution. At all events, to use your own words, "it is an interesting and important investigation, whether considered in a political or medical point of view†," and I hope you will return to your original determination, "not to let the opportunity pass without a *full* and *impartial* inquiry." (F)

Glasgow, Jan. 10, 1815. ROBERT WATT, M.D.

OBSERVATIONS BY THE EDITORS.

THE high character which Dr. Watt has justly acquired for science and research, by his Treatises on Diabetes and Chincough, claims our respect and attention. But, however profound our respect, or great our inclination may be to treat his remarks with all due deference, public duty constrains us to demonstrate that the learned Doctor is not always correct; and that, which is no rare occurrence, when pre-conceived and fondly cherished opinions are oppugned, the aberrations of the judgment are in an exact ratio to the

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* There is perhaps no town in Great Britain, where the profession is more unanimous in promoting vaccination than in Glasgow, and none where it has been and continues to be so universally practised.

† *Repository*, vol. i. p. 449.

force of the arguments with which these favourite opinions are attacked, and the danger of their being overthrown.

With such impressions, we presume Dr. W. perused the article in our Number for last January on Vaccination, (p. 36); and too hastily committed his feelings thereon in the above letter.

Dr. W. calls upon us, and by no indifferent plea, to publish his letter *literally*. Having complied with his desire; and lest any should read it without the means of referring to the paper which gave birth to it, we must avail ourselves of the privilege of replying, and endeavour here to expose some of the errors and misconceptions into which he has fallen.

(A) Dr. Watt is surprised that we have given up the investigation just as measles is more fatal than they have been at any other period since we instigated it. Having distinctly stated (p. 39,) our reasons and authorities for concluding, that, if the mortality from measles be increased, it does not proceed from the diminution of small pox by the introduction of vaccination; and feeling the evidence adduced decisive, where, we would ask, is the necessity of continuing the agitation of the question? To pursue it, would be acting against our avowed conviction.

The Doctor has, very unfortunately, but we are convinced unintentionally, mis-quoted the passage, (p. 40, line 14.) He makes us say, "from sources much more extensive than *we* possess;" whereas it is printed "from sources much more *numerous* and extensive than *he* possesses;" and, arguing on this erroneous reading, avers, that we allude to *concealed sources* whence we draw our information and conclusions. The sense of these two passages being as widely and obviously different as any part of our proceeding is to concealment, we have to refer to the paper itself only to refute this accusation.

We rest our arguments and deductions on registers of the deceased and the records of the diseases of the living, and the testimony of disinterested observers—Dr. W. on the other hand depends solely on "the records of the dead." We deny that increased mortality from measles is any proof of the justness of his inferences; consequently his calculations of relative numbers of deaths are, in our judgment, irrelevant.

(B) What "sweeping conclusions" have we deduced from the number of deaths in the registers of the *Repository*?—On the contrary, we have expressly guarded our readers from drawing any conclusions from the deaths in the tables, except as far as regards deaths from measles; because "we are fully aware, that equal correctness from various causes cannot be expected in the return of *all* the deaths consequent on the diseases entered," (p. 38.) The inference we intended is plain: viz.—that as thirty-seven deaths only have been reported out of 831 cases of measles, six only of which happened in those classes of society where the advantages of early medical attention and good lodging and nursing can be obtained, any increase of mortality in the London Bills from that disease was to be imputed to other causes than the simple introduction and operation of vaccination.

We confess we do not exactly comprehend the application of the numbers of the deaths, and the actual cases in the *Repository,* to the total of deaths in the London Bills of Mortality, and an imaginary number of cases for the year, in the metropolis. But if Dr. W. intend to impeach the accuracy of our registers from the data that he has selected for judging them, we will not decline his premises; but prove, that in his arithmetical computation of a *golden year,* he is equally unhappy as in any of the generalizing principles of which he is so profuse. But we readily credit, that he was not "serious;" that he was indulging only his penchant for numericals, and a little harmless raillery.

(C) Without meaning offence, we really must treat this paragraph as containing proofs of the most pertinacious adherence to a speculative opinion, and the force of prejudice, of any we ever met with from a learned member of a liberal Profession; and who professes no other object in publishing his opinions, than "the hope that the present inquiry will call forth similar investigations from other quarters*."

Whence did Dr. W. look for proofs of the correctness or fallacy of his conclusions? What! from the records of the dead only? Why, then, consult the opinions and the experience of the living? Are all the respectable individuals to whom we have referred, who have taken so much trouble, and given the results of their inquiries at Dr. W.'s particular invitation, prejudiced, and united by a simultaneous desire of deceiving? and have they all decended to "glossings" of the most important truths, simply for the sake of crushing a question, in the confirmation or refutation of which they have no interest but the common good—a question, too, that none of them either raised or sought?

The testimony of Dr. Henry† is surely most peculiarly apposite; since the population, and the occupations of the lower orders of the inhabitants of Manchester and Glasgow, more nearly correspond, than any two places in the United Kingdom.

The London and Glasgow Bills of Mortality may shew how many die from measles, and that they increase: but does this alone justify Dr. W.'s inferences? The evidence of the many physicians and surgeons mentioned (p. 39) is not general,—but specific; and is derived from the positive results of correct Registers of every disease incidental to many thousands of children placed in the best regulated Charities in Europe—Registers that commenced long antecedent, and without reference to this inquiry. And this phalanx is in direct opposition to and entirely contravenes Dr. W.'s inferences.—Yet all this is nothing! and it is "quite unnecessary therefore to attempt any refutation of the individual opinions, and *statements,* to which you have referred‡!" But there are who "*melius, pejus, prosit, obsit, nil vident nisi quod lubent.*"

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* V. App. to *Treatise on Chincough,* p. 391, 392.

† V. *Med. Chir. Trans.* vol. v. p. 5.—‡ V. Dr. Watt's letter, p. 200.

(D) Disregard of impartiality in so important a question, would certainly be an heinous offence; and as we are charged with it, it is fitting that we exculpate ourselves.

Dr. W.'s appalling discovery has been published seventeen months. It has been disseminated over the whole of the British, and probably some foreign states:—1. by his own writings:—2. by the means of a very sensible paper on the subject, by Sir Gilbert Blane, in the fourth volume of the Medico-Chirurgical Transactions, which almost immediately followed Dr. W.'s work, and was well calculated to fix the attention, and call forth the observations of the faculty:—3. it has also been canvassed in all the periodical medical journals, and most especially in the MEDICAL REPOSITORY; to the correspondents and readers of which, our frequent notices and inquiries for information are well known. Consequently, we deem it impossible that there is a medical practitioner in the British dominions to whom the inquiry has not been propounded.

Through these or any other channels, public or private, has any single remark been offered confirming or even sanctioning Dr. Watt's inferences? We know of none. Have any statements from credible authorities been adduced, tending to disprove Dr. W.'s inferences? Yes! Many that appear to us to have been made with great care, and unbiassed judgment*. Have the EDITORS of the REPOSITORY referred to their authorities, and have they concealed no testimony favourable to Dr. W.'s inferences? They have openly stated the grounds on which they contest such inferences: and as openly challenge any one to prove a dishonest appropriation of any communications, verbal or epistolary, that they have received. If after this lapse of time, and upon this concatenation of evidence, we have formed a decided opinion,—are we precipitate?—are we wrong? The question of impartiality is now before the public: it will no doubt be equitably decided.

(E) We have not said, nor do we think that the cause of vaccination would be "ruined" if Dr. W.'s positions be admitted. But we believe, that if they were established, one of the strongest incitements to vaccination would be considerably weakened. For who, when there is a choice, would prefer vaccination to inoculation of small-pox; when by adopting the former, they would preserve their children but to be the victims of an increased predisposition to other diseases, such as measles, hooping-cough, &c.?—from one or the other of which, according to Dr. W.'s inductions, there is now six times greater danger than before the Jennerian practice prevailed.

(F) It was not from a froward wish of controverting Dr. W.'s hypothesis, that we so readily entered into this investigation. We were deeply impressed with the very serious and evil consequences that might follow, if such opinions gained weight, from neglecting to

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* V. *Med. Chir. Trans.* vol. iv. v. V. *Repository*, vol. iii. p. 39.

employ the means others, as well as ourselves, possessed, of eliciting the truth: and we were solicitous, if the position were disproved, that the error might be corrected, ere the enemies of vaccination had seized on a doctrine so favourable to their purposes; or its propagation had augmented the existing prejudices. We are not bigots; we neither mean to advocate the infallibility of vaccination, nor to impugn the advantages of variolous inoculation by this discussion: such considerations do not relate to the present question.

To Dr. W.'s habits of observation, we are certainly indebted for directing the attention of the faculty to the result of his examination of the Glasgow registers; and we confess it is remarkable that none before him had noticed the apparent increase of mortality from measles. An investigation of the cause was worthy the pursuit of a medical philosopher. None perhaps were better qualified than Dr. W., both from his ability and local knowledge, to elucidate it. Had he been content to have ventured his opinion, and had he invited his contemporaries to examine and compare it with the results of their researches and experience, before he introduced, in the crude and apparently adventitious form of an appendix to a work on a quite different disease, so interesting and important an inquiry, he would have acted more consonant with a sincere desire of searching for truth, with an unequivocal love of science, and with the proper discretion of a physician:—He would have commanded the thanks of the public.

He now appears likely to experience the usual effects of promulgating a precipitate, and therefore erroneous conclusion; and we lament to see one so gifted, rejecting a mass of confuting evidence; which, on minds unprejudiced, flashes the strong light of conviction. He still adds, by this conduct, another rivet to those bonds that fast fetter his better judgment.

Still if any fact occur in practice, or any information can be offered, that tends either way to throw light on this subject, the *Repository* will be *impartially* open to its publication; nor will the Editors ever suppress a truth illustrative of a medical point or doubt, though it be to the subversion of *a favourite or pre-conceived opinion.*

Quærere Verum is our motto, and when we depart from either the spirit or the letter of it, we cease to deserve the confidence and patronage we have hitherto received, and have endeavoured to merit.

Apology is due for occupying so much space, in which self stands so prominent. But we have been forced into the lists; and other weighty considerations were so implicated with our defence against Dr. W.'s philippic, that we have been unavoidably led to a greater length than we would admit for any motive purely personal. We humbly conceive we have been discharging a duty to the public as well as to ourselves, by thus commenting on Dr. Watt's letter: and having so done, we shall subscribe to that rule against admitting controversies, which we have been so often compelled to impose on others.

VII.

Case of Small Pox, twice after Vaccination. By John Ring, Member of the Royal College of Surgeons in London.

Having seen, in the *Medical Repository* for last January, (see note, p. 37,) an allusion to the case of a daughter of Dr. Stewart, of Plymouth, I thought it probable that you were misinformed; and that the report might have derived its origin from the case of her elder sister, of which the particulars were published several years ago, by Mr. Dunning. I therefore wrote to Dr. Stewart, who has been so obliging as to send me an account of the more recent case; which differs in some measure from your statement.

I have not been able to find Mr. Dunning's pamphlet; but believe the statement of the elder Miss Stewart's case to have been as follows:

Miss Stewart had been inoculated for the small pox; the arm rose, and she had about two hundred pustules, attended with constitutional indisposition. A few years after, Dr. Stewart put her, and four children of a druggist, who had been vaccinated, to the test of variolous inoculation. The consequence was, that a local pustule took place in the arm of each of the four children who had been vaccinated; but Miss Stewart's arm rose; she sickened, and was much more ill than any person whom Dr. Stewart had ever seen under inoculation. What eruption appeared I do not recollect, but will transmit an account of it, should I be so fortunate as to meet with it.

The case of the youngest daughter of Dr. Stewart is as follows:

She was vaccinated by Dr. Stewart in her infancy; and on the ninth day, lymph was taken from the vesicle on her arm, by Dr., now Sir William Knighton, and inserted into the arms of one of his patients; which produced the disease in a satisfactory manner; and Dr. Stewart considered the disease in his daughter to have gone through its regular stages.

On the 24th of July 1804, two years after vaccination, she was inoculated with active variolous matter; and on the next day, her arm was more inflamed, and the cuticle more elevated than Dr. Stewart had ever seen in any case, four or five days after inoculation, in ordinary circumstances.

On the fifth day, the inflammation had considerably increased; on the sixth, also, it appeared to increase; and four or five pimples appeared on different parts of the body.

On the ninth day, the process of scabbing was complete, and the effects of inoculation were altogether inconsiderable. For this case, also, Dr. Stewart refers to a letter from him to Drs. Remmeth and Woolcombe, inserted in Mr. Dunning's pamphlet, in 1804.

In April 1814, this young lady was attacked with the natural small-pox, which was clearly traced to the children of her maid servant, who at that time laboured under the confluent disease.

The eruptive fever was severe; she had a plentiful crop of pustules; and on the eleventh day, the scabbing process commenced; accompanied with fever and delirium.

She was attended every day during her illness by Dr. Gaskin; and frequently seen by Dr. Woolcombe, Dr. Thompson, first physician to the Royal Hospital at Stonehouse, Dr. Lockyer, Dr. May, Dr. Cookworthy, Dr. Binny, Mr. Dunning, and almost all the medical gentlemen in Plymouth, Dock, and the neighbouring towns; none of whom entertained a doubt of her disorder being the small-pox.

In 1804 she was visited by General Tench; and again in April 1814, when he observed, that her case was a sword which cut with both edges; the last disease militating as much against the small-pox as against the cow-pox.

It is with regret I have to add, that Dr. Stewart has been prevented, by severe illness for many months past, from publishing this curious and interesting case, as he intended. He thanks me for now affording him an opportunity of laying it before the public, and I am sure you will join with me in acknowledgments for his ready acquiescence in my request.

He also refers me to Mr. Dunning's pamphlet, for the strong case, as he justly calls it, of his eldest daughter, Mary; which, as he observes, confirms the opinion of Dr. Jenner, that the constitution cannot, by previous variolous infection, be rendered totally insusceptible of its contagion.

To this opinion I readily assent, having maintained it many years; and having been one of the council of the Medical Society of London, who published, in the Memoirs of the Society, a well-attested case of secondary small-pox, which proved fatal, long before the practice of vaccination was introduced*.

New Street, Hanover Square, Feb. 7th, 1815.

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* We cordially join with Mr. Ring, in thanking Dr. Stewart for the favour of his communication. Although our information of the case was derived from one of the medical gentlemen who visited Miss S. Stewart; yet we should not have ventured to detail it, but on the authority of Dr. S. himself. Our notice of it was merely to illustrate the imperfection of our knowledge of the cow-pox. However, we rejoice in the slight error in our account, since it has produced a correct detail of the fact, with a reference to the case of Dr. S.'s eldest daughter. Two such anomalies, in one family, further prove the impossibility of reducing the laws of contagion to a system.—EDITORS.

VII.

Two Cases of Palsy, in which Phosphorus was successfully employed, with some Observations on the Use of that Remedy. By Ignatz Gumprecht, M. D. Hamburgh; corresponding Member of the Medical Society of Montpellier, and Knight of the Russian Order of St. Wladimir.

Phosphorus may incontestibly be regarded as a very penetrating and powerful medicine, and of considerable efficacy, both in palsy of single organs, and in cases of general paralysis. The two following cases, illustrative of its utility, came immediately under my own observation.

Case I.

A Russian officer of Uhlans, 29 years of age, of a delicate frame of body, was suffering under palsy of the lower extremities, in the military hospital at Luneburg. He was unable to support himself in the erect position; and only, by the aid of crutches, and leaning on his servant, could move a few paces forwards. As he had been afflicted with syphilis, and I considered this palsy might be the consequence of that disease, although mercurial remedies, under different forms, had been already employed without any good effect, yet I prescribed them again for him in the following form:

℞ Merc: præc: rubri (Hydrargyri Nitrico-oxydi) gr. j.
Florum Sulphuris ℈iv.
Camphoræ gr. x.
Sacchari albi ʒ j. Tere et divide in partes æquales viij, quarum sumatur j mane et vespere.

Although the red precipitate is extremely beneficial in old cases of syphilis, yet it proved ineffectual in the present instance; and therefore I resolved to try the effect of phosphorus, both as an internal medicine and an external application. It was ordered as follows:

℞ Phosphori gr. iv.
Naphthæ vitr: ʒ ss
Olei Menth: p. p. ℈iv. Misce et solve. Sumat gutt. xx ex cyatho decocti avenæ tertia quaque hora.

℞ Phosphori gr. xxij.
Camphoræ gr. xxx.
Gummi arabici (acaciæ) ʒj.
Unguentum adepis (Adepis Suillæ) ℥j. Tere ut ft. unguentum.

This ointment was directed to be rubbed upon the legs, using one third part of it every day.

In the short period of three days the patient began to amend, and feel more strength in his limbs, being able, with great exertion, to move a few steps forward in his chamber without any assistance. The dose of the phosphorus, and also the quantity contained in the external application, were now gra-

dually augmented; and before the termination of six weeks, I had the satisfaction of seeing my patient restored to health.

Case II.

An officer in the Russian landwehr, (militia,) having been frequently exposed to cold during the last campaign, and being subject to arthritic complaints, was afflicted with a swelling of the left knee, attended with pain, and an inflexibility of the affected leg. Different powerful anti-arthritics having procured no alleviation of the symptoms, the use of the phosphorated ointment was resorted to. In the course of three weeks he was so far restored, that the swelling had disappeared, and he was able to walk about, feeling some unweildiness only in the affected part. The quantity of the ointment used was considerable, but no other remedy was employed.

Another officer in the landwehr, afflicted with a palsy in the arms of arthritic origin, was also cured by the same application in a speedy and durable manner.

Observations.

To employ phosphorus with success, it ought to be administered in adequate doses and a proper form, with certain dietetical precautions; the neglect of which not only frequently prevents the remedy from answering the intended purpose, but sometimes occasions it to be productive of deleterious effects. In my practice I have generally followed the directions of the celebrated Professor Lobenstein of Jena. This physician has proved, that the exhibition of phosphorus in pills, or united with honey, or in emulsions is improper; and that the best vehicle is naphtha mixed with essential oils. He has also drawn up the following dietetical rules to be observed during a course of phosphorus:

1. Phosphorus is never to be taken in the morning on an empty stomach.
2. Salads, acescent dishes, acidulous liquids and beer are to be avoided while using it.
3. Mucilage of salep mixed with generous white wine, or rice gruel mixed with Burgundy are the best kinds of beverage. Old Franconia, Hungary, or Greek wines, and such as contain much aroma with very little acid, may be drank.
4. The diet should be light animal food and tender vegetables; but cabbages, turnips, onions, horse raddish, and peas should be refrained from, as they are apt to occasion, during a course of phosphorus, a feeling of pressure of the præcordia, vomiting, and purging, and often a relapse of the complaint.
5. All sorts of fruit, both raw and cooked, should be avoided.
6. Milk, and dishes prepared with it are also detrimental.
7. Cold must be guarded against, and the patient should wear flannel next the skin.

February 1815.

PART II.

ANALYTICAL REVIEW.

I.

Observations on the Principal Diseases of the Rectum and Anus; particularly Stricture of the Rectum, the Hæmorrhoidal Excrescence, and Fistula in Ano. By THOMAS COPELAND, Fellow of the Royal College of Surgeons, London. Second Edition, 8vo. considerably enlarged, pp. 183. Callow, London, 1814.

SEVERAL motives operate to induce us to go into a more detailed account of these "Observations," than second editions generally offer. The importance of the diseases treated of; the talent shewn in their investigation; the reasonableness of the practice; and our having hitherto had no opportunity of bringing it before the public, the first edition having been published a considerable time before the commencement of the *Repository*, will afford a sufficient apology, were an apology required.

The first part of this volume treats of a disease of great importance in itself; as a local affection, often obscure; and, when detected, hitherto of difficult management. But the importance is much increased, when it is considered as giving rise to constitutional derangements, curable only by removing the local disease. The rectum is liable to diseases which arise from its particular structure, its uses, its relation to the bladder in the male, to the vagina in the female, and to other important parts; but especially from the action which it is every day compelled to perform in the expulsion of the fæces. But that state of the intestine, which is the subject of Mr. Copeland's Essay, a diminution of the capacity of its canal, is perhaps the most irksome and fatal. It is often mistaken for ileus; is sometimes considered merely as obstinate constipation; and being then treated with violent cathartics, is most seriously increased. All ages, and both sexes, are liable to contracted rectum; but it is most common about the middle age; and women, Mr. Copeland is of opinion, are more frequently affected than men. The pathognomonic signs are so essential to be known, where an early acquaintance with the exact nature of the complaint is so important, that we do not hesitate to lay them before our readers in the words of the author.

"The first symptom of the disease is an habitual costiveness; but this is so frequent an occurrence, and produced in so many ways, that it is not likely that the cause should be sought for in an organic affection of the rectum; mild purgatives are resorted to, and the symptom being relieved, the cause is no longer sought after. When this has subsisted for some time, the patient complains of what is called piles, and what is often really so, as a consequence of obstructed circulation in the parts. The remedies usually given in such cases are applied, sometimes with relief, but more frequently otherwise; and then the good old maxim of the inexpediency of curing piles, perhaps rescues the practitioner from the discredit of failing to relieve his patient, while the cause of the disease is still unknown. In a short time, as the gut continues to decrease in diameter, the efforts to expel the fæces become more violent, and the consequent progress of the disease more rapid. The stools, which have been long evacuated with difficulty, become contracted in size, appearing like earth-worms in their form, or small pellets. In this stage it is sometimes, in the male, mistaken for an enlarged prostate gland; but if the finger be introduced into the rectum, the gut will be found either obstructed with small tubercles, or intersected with membraneous filaments; or else the introduction of the finger will be opposed by a hard ring of a cartilaginous feel, composed of the diseased inner membrane of the intestine, instead of that regular tumour on the anterior part of the rectum, which is formed by an enlargement of the prostate gland. As the disease advances, the fæces become more fluid, and there is a thin sanious discharge from the anus, accompanied with tenesmus; not, however, the painful tenesmus of dysentery; but with less distress and less irritation of the parts than in that disease. During this time the constitution suffers so little, that the patient might be supposed, from appearance, to enjoy full health. But the ravages of the disease now begin to be felt in their effect on the general habit. Frequent eructations of air confined in the intestines, added to the other symptoms, torment the patient, and render his life miserable. This symptom is so constant, that if it did not occur also in affections of the kidnies, and other complaints, it might be regarded as *pathognomonic;* but I think it prevails to a greater degree in this than in any other disease. At this period abscesses very frequently form in the neighbourhood of the anus, and sometimes break into the vagina in the female, and the fæces are discharged through the fistulous orifice. In the male, an adhesion takes place with the bladder, and the abscess discharges itself with the urine, and sometimes fæces and wind are voided by the urethra. But more frequently the matter makes its way through the nates, as in cases of common fistula, for which disease it is not unfrequently treated."

The second and third sections describe the different kinds of stricture of the rectum, and their causes, with the treatments.

The species of stricture of the rectum may be divided under two genera:—1. Those which are simple, and merely local; 2. Those which are specific, and connected with constitutional

disease. Although we have not found this arrangement distinctly marked in the work before us, we think the materials furnished by Mr. Copeland may be thus disposed with advantage to our readers. The first genus will then contain the simple strictures.

Spec. 1. The indurated annular stricture.
2. In which the rectum is obstructed by tubercles.
3. In which the rectum is obstructed by membraneous filaments.
4. Indurated stricture, from a thickening of the coats of the intestine.

" In all these species the first object of the surgeon should be an enlargement of the obstructed part, by the introduction of a bougie. This bougie should be of such a size as to pass, when well lubricated with oil, without much difficulty or pain. Sometimes when the disease has been of long continuance, it will be necessary to begin even with a large sized urethra bougie, or one of the same size as those which are made for a stricture of the œsophagus, and of a length that is likely to pass beyond the stricture; that is, about six, or seven, or eight inches: but, I think, it is of consequence to use a bougie at first, which is rather too small than too large. The benefit is derived much more from the continuance of the bougie in the rectum, than from a sudden dilatation of the strictured part. And when it forcibly distends the stricture, the pain which is produced, renders it necessary to withdraw the bougie much sooner, than if it had been of a size which would pass easily. When it has remained for half an hour or more, according to the feelings of the patient, it should be removed, and passed again the next day; and the same sized bougie should be continued for several days, before any attempt be made to enlarge it. In the introduction of the bougie, it is necessary to bear in mind the anatomy and situation of the parts which are concerned. The projection which the os sacrum makes into the pelvis has, in many instances, been taken and treated for stricture of the gut.

" The bowels should be kept constantly lax by the use of castor oil, electuary of senna, or some such mild purgative medicines, whenever it is necessary, during the whole cure."

In addition to these general directions for the use of the rectum bougie, Mr. Copeland has found it to be requisite to occasionally employ a bistoury to divide the thickened parts in the first species, the indurated annular stricture. This division of parts is made in the posterior portion of the intestine, contiguous to the sacrum.

Under the second genus, two species connected with constitutional affection, are described.

Spec. 1. Cancerous stricture.
2. Syphilitic stricture.

Of the existence of the first species of this genus there seems to be no doubt: of the second, the existence is perhaps problematical. When the contraction of the intestine is accompanied by any specific disease, it will be vain to expect relief from the local treatment alone; and the cure of the constitutional affection must be attempted.

From the general view of this disease, the following corollaries are deduced.

"First, That a stricture of the rectum is by no means so uncommon a disease as is usually imagined, and that it has been hitherto generally considered as necessarily fatal, because it has been discovered only in the last stages, or by dissection after death.

"Secondly, That many of those obstinate cases of constipated bowels, which are of long duration, arise from an organic obstruction to the passage of the fæces, and that this obstruction is most frequently so situated as to be within the reach of surgical aid.

"Thirdly, That it is requisite, in such cases, to examine the anus with the finger; or, if the symptoms be strongly marked, and there be no obstruction within the reach of the finger, to examine it with a rectum bougie.

"Fourthly, That the use of internal medicines alone will be unavailing in such cases, and that nothing without the use of the bougie affords any hope of relief to the patient.

"Fifthly, That the disease is much less frequently of a cancerous nature, than from the description of authors it may seem to be.

"Sixthly, That it is often combined with symptoms of the venereal disease, and, in such cases, is more readily relieved by mercury, added to the use of the bougie, than by any other means.

"Seventhly, That if the disease is often found in combination with syphilitic symptoms, it is fair to infer that it may, in some cases, also, be the solitary symptom; and that if it resist the local treatment, and there be reason to suspect venereal mischief in the habit, it is right to try the effect of mercury at the same time.

"Lastly, That whatever be the nature of the disease, provided it be not true cancer, it is necessary to continue the use of the bougie, at intervals, for a considerable time after the free passage of the fæces has been established, and to return to it whenever there be any symptoms of recurrence of the complaint."

Six cases of strictured rectum are inserted, to show the nature and treatment of this complaint.

The fourth section is designed to illustrate and explain the "consequences produced by the irregular or too powerful action of the sphincter muscle of the anus." Many cases called stricsure of the urethra and of the œsophagus, admit of more easy and speedier relief by the use of the bougie, than could possibly happen if the structure of the membrane of these canals were disturbed, as in cases of great and permanent stricture. This form of stricture has been denominated spasmodic. Ana-

logy would lead to the conclusion, that the rectum might be subject to this sort of stricture, occasioned by some change in the action of the sphincter: and experience and observation have shewn this to be the fact. Mr. Copeland has probably explained this state of the sphincter better than any preceding writer. The judicious employment of the bougie, the occasional use of opium, and mild cathartics, are the proper remedies. Several curious facts are noticed in this section, and cases illustrative of the practice are annexed. For this elucidation of a disease not very uncommon*, the author has a claim to the thanks of the community. His practice is simple, *rational*, and *efficacious*†.

The fifth section relates to "the hæmorrhoidal excrescence;" and its object is, principally, to shew the hazard attending the removal of these excrescences by ligature. The deaths which have ensued on the application of ligature to hæmorrhoidal tumours, especially on the evidence of the most respectable French surgeons, seem very clearly made out; and will undoubtedly produce great caution in the adoption of this measure. A very useful view is given of the subject, much practical information is dispersed throughout the section, and the

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* So little understood was stricture of the rectum, within a few years, that Dr. Parr, the compiler of the latest and best English Dictionary of Medicine, in the year 1809, states "that no measure similar to the bougie had then been adopted."

† For those who may be disposed to follow up the inquiry, we insert the following references. Mem. of the Lond. Med. Society, vol. v. p. 6.—Mem. de l'Academie de Chirurgerie, tom. iv. p. 226.—Morgagni de Sedibus et Causis Morb. Epist. xxxii. art. 8.—Morgagni Epist. Anatom. Medica 32. art. 6. de Morbis Ventris, and 13.—Bonetus, Sepulchretum Anatomicum, tom. ii. p. 269. edit. Geneva, 1500.—Memoirs of the Lond. Med. Soc. vol. ii. p. 9.—Journal de Chirurgerie, tom. i.—Duncan's Annals, 1797, p. 307.—Memoires de l'Academie de Chirurgerie, tom. i. p. 235.—Ruysch. tom. iv. obs. 95. Petit, Œuvres Posthum. tom. ii. pp. 83, 93, and 156.—Memoirs Lond. Med. Soc. vol. iii. p. 496, 542.—Prix de l'Academie de Chirurgerie, tom. iv. by M. David, under the assumed name of Bazille, and Justamond's Translation of his Memoir on the Effects of Motion and Rest.—Wiseman's Surgery, folio, Lond. 1676, p. 237.—Richerand Nosographie Chirurgicale, tom. iii. p. 418. Paris, 1808.—Pott's Works, by Earle, vol. iii. p. 87.—Le Dran's Obs. de Chirurg. tom. ii. obs. 84.—Instituzione Chirurgiche di Monteggia, p. 549. Milan, 1805.—C. Bell's System of Operative Surgery.—Baillie's Morbid Anatomy, p. iii.—Portal's Mem. del Institut. Class. Mat. and Phys. 1807.—Portal's Anat. Medical. tom. v. p. 258.—Medico-Chirurg. Trans. vol. i. p. 129.—White's Obs. on Contracted Intest. Rectum, 12mo. Bath, 1812.

frequent causes of these excrescences is ingeniously referred to a peculiar state of the spincter ani muscle.

Prolapsus ani makes the subject of the sixth section.

"The prolapsus ani has so many points of analogy with the complaint treated of in section five, that it may, in some measure, be considered as the same disease, in a more chronic and advanced state. It is produced by the same causes; that is, by any causes which will excite long continued irritation, or violent straining. It is much more difficultly retained in its position, comes down more frequently when walking or riding, is more easily returned, and produces less pain: but all these are rather consequences of long continuance of the complaint, than difference of its character; it is also a common consequence of the stone and other diseases of the bladder; but in these instances it is only a symptom, and not the complaint itself. It is so frequent a disease, in several branches of the same family, that particular structure must be supposed to have some share in producing it, or predisposing to it."

The author proposes to cure this disease, by restoring the parts to their proper adhesion; and this is to be accomplished, by exciting a degree of inflammation on the external surface of the inner membrane of the rectum, sufficient to produce a consolidation and union of the parts. The mode of effecting this, which Mr. Copeland thinks most adviseable, is the following:

"The bowels being well emptied previously, and the time chosen when the projection is considerable, to pass a tight ligature round a very small portion of the inner membrane, at a part not immediately in the vicinity of the anus, that is, above the union of the cutis with the mucous membrane, and to return it, together with the ligature, into the gut. This is not, for the most part, a painful operation; but it is adviseable that a grain of opium, or a few drops of laudanum be given, both to procure ease, and also that the bowels may be somewhat confined for a day or two after the operation; for an evacuation during the active stage of the inflammation would give considerable uneasiness, and interrupt the adhesions which we depend on for the cure. Nevertheless the cure has not been less complete, because the parts have come down in a more swelled and painful state for several days after the operation. The patient must be directed to keep his bed, should live very sparingly, and cloths, dipped in goulard and water, or laudanum and water, should be applied when the pain or inflammation require it. In two or three days, if the bowels have not acted spontaneously, some mild aperient should be given. In about five or six days the ligature comes off, and shortly afterwards the part will heal, and cease to come down, or come down only in a much less degree than before the operation."

There are, however, circumstances and conditions of health which forbid this operation. If the prolapsus be accompanied with great purulent discharge, indicating ulceration of some

other part of the gut; if there be any affection of the bladder or prostate gland; if the health of the patient be otherwise bad, the operation should not be undertaken. An abraded state of the prolapsed part, it seems, does not present an objection.

The subject of the seventh section, *Fistula in Ano*, has been, for a disease of such frequent occurrence, much neglected by British surgical writers; and for many years, with the exception of Mr. Pott's treatise, scarcely any thing demanding notice on this subject has issued from the English press. Neglected as it has of late years been, it must be observed, that almost, if not quite, the first regular treatise on any disease by any Englishman, was on *Fistula in Ano*. John, of Arden, an English surgeon, for many years practising at Newark, wrote a treatise on this disease about the year 1370, and which may be considered, possibly, as the most intelligent and original production on medical science which that age had produced. It was translated into English, from the Latin, by John Read, in 1588. The object of Mr. Copeland is not to go into a detailed history of this complaint, but only to explain some embarrassing circumstances which occur during the operation, or soon after; others which prevent the disease being perfectly cured by that operation; and some conditions of the system which forbid it to be practised. The hæmorrhage which sometimes takes place, usually a few hours after the operation, if it be not important from the magnitude of the divided artery, becomes often so from the difficulty, perhaps impossibility, of securing it by ligature. It is usual to attempt the suppression of this hæmorrhage, by plugging the intestine and the wound with dossils of lint. Upon this Mr. Copeland thus expresses himself:

"I have so frequently seen the hæmorrhage kept up as long as this method of plugging the intestine was persevered in, and cease spontaneously when every kind of application was omitted, and the parts left for a short time exposed to the open air, together with a cool room, and avoiding all drink that hurries on the circulation; that I cannot help thinking, that the irritation of the compresses keeps up the bleeding, and that the most eligible mode of treating it, when it is impossible to secure the vessel with ligature, is to take off every kind of dressing, and to suffer the part, as much as possible, to be exposed to the external air. To be a passive spectator, however, of an hæmorrhage, though not a dangerous one, for an hour or two, perhaps, after the surgeon has performed an operation, is a very irksome task, and a very painful state of suspense for the patient; but I am persuaded, from repeated experience, that by being too busy with compresses, and styptics, and astringents, and such like applications, we most frequently only hide the bleeding, and rather prolong its continuance, than otherwise. After many unsuccessful attempts to secure a bleeding vessel under such circumstances, I once accomplished it by introducing a blunt gorget into the rectum;

and by keeping the gut thus dilated, I was enabled to see the orifice of the bleeding artery, and to secure it; and I have been led from this to conjecture, that the old instrument, the speculum ani, is not altogether to be rejected from the apparatus of surgery, or rather that a more convenient instrument might be contrived to assist us in similar difficulties."

Section eight treats on *Imperforate Anus*, under four varieties of this malformation. The first, and most simple of these, is occasioned by a membrane stretched over the orifice of the anus, which it closes. The second is constituted by the rectum terminating in a cul de sac, at different distances from the anus. The third is formed by the rectum terminating in the vagina of the female. The fourth, when the rectum terminates in the bladder of the male.

The second of these varieties is so important, so likely to fall under the management of practitioners in remote situations, and so urgently demands prompt decision, that we apprehend our readers will be pleased with our laying before them the author's directions for its management.

"Sometimes there is no appearance of aperture at the proper place, or only a small blind foramen or sinus on the os sacrum; more frequently the anus is apparently perfect, but a bougie or other instrument being used, the passage is found to terminate about an inch or more from the external anus. The former kind hardly, if ever, admits of perfect relief, although the operation may succeed in opening a passage for the fæces, which has been done by Saviard and others. In the latter, rare as the instances of recovery are, it has been my good fortune to preserve the lives of two children, without their suffering any material inconvenience in the function of the part. In both cases, it is a matter of great uncertainty how far the rectum descends. Often it is altogether absent; sometimes there is a separation between the rectum and the sigmoid flexure of the colon, and the colon has been found floating unattached in the abdomen. It is evident that the probability of cure will depend on these circumstances of the malformation. In the more simple cases, however, there are some points which are of great importance in the operation, and the subsequent treatment, which are not, I believe, commonly adverted to. It has been remarked, that there is a better chance of success when the operation is delayed till the abdomen has become somewhat tense, that is, usually in two, or, at most, three days, rather than at a more early period; and I think that it is probable the termination of the rectum may be forced more towards the anus by the efforts of the child to pass the fæces. When no operation has been performed, or an ineffectual one, the complaint is fatal, in all periods, from four to twelve days. We are not to conclude that the operation has failed altogether, because the meconium does not follow the lancet or trocar; for it often is evacuated during the twenty-four hours which succeed the operation; and the deficiency of gut is supplied by the consolidation of the cellular membrane

round the sphincter muscle. In one instance I have thought the rectum has descended into the wound a short time after the operation. There does not seem to require any particular directions for the operation, to a person familiar with the natural anatomy of the parts; for we cannot vary it according to circumstances of the case, and the variations of the complaint, which are concealed from our view. It is of vast importance that the instrument should be carried so far backward, towards the os sacrum, as to secure the seminal apparatus from injury. M. Louis has described a particular trocar and canula for the operation; but, I believe, that a flat trocar will answer every purpose that is intended. The wound of the gut, made by the trocar, is so small, that although the meconium is evacuated through it at first, from the tense and tumid state of the canal, there is generally manifested a great disposition to unite and coalesce immediately afterwards; thus a great impediment is still given to the expulsion of the fæces, both by the want of power in the contractile parts, which have been over-distended, and by the swelling of the lips of the wound from the succeeding inflammation. This can be remedied only by enlarging the wound, or, what at that period is far better, by the introduction of a hollow instrument, through which the fluid fæces will flow. This is of so much importance, that I believe many children would have been saved by it, who have perished after the operation has opened the gut. The process will be required for a longer or shorter time, and at greater or lesser intervals, according to the child's power of expelling its fæces. Perhaps a large elastic catheter, or a large glyster-pipe, are as convenient as any instruments for the purpose. If the finger be introduced about a fortnight after the operation, the extremity of the gut will be felt thickened and indurated, in a way that must necessarily obstruct the passage of the fæces, and will sometimes require to be divided by a small probe bistoury. A bougie or tent must be used for some time afterwards, to preserve the space which has been obtained."

Ulceration of the mucous membrane of the rectum is treated of in the ninth section. The symptoms of this complaint are derived rather from the part of the intestine which is affected, than from any peculiarity of the affection: and it is the circumstances of locality which constitute two varieties. If the disease be placed quite above the sphincter muscle, it excites but little pain or inconvenience, although ulceration may have made considerable progress. If the sphincter be involved in the disease, there are, either from the first attack, or after a short period, very frequent and very painful tenesmus and incontinence of fæces, which keep the patient out of society, and destroy all his enjoyments. In the first variety a quantity of purulent matter is passed before each stool, and sometimes without any fæces accompanying it. For a considerable time, the influence it has on the general health is not very striking; indeed the disease, on this account, becomes of more importance,

as it often does considerable mischief before it attracts notice. If the second variety be confined to the surface of the membrane round the anus, there is usually an exudation of purulent fluid *per anum.* It is often attended with, and perhaps produces a tendency to *prolapsus ani*, from the irritation and straining it excites: the protruded part has a bright red and abraded aspect.

The means of cure are more certain as the disease is nearer the anus. Mercury, in small and long-continued doses; injections with aq. calcis cum hydrarg. submur.; or a weak solution of hydrarg. muriat. have been serviceable. When the ulcerations are near the external surface, they have often healed under the use of a liniment of equal parts of aq. lytharg. acet. and ol. oliv., after they have resisted every other remedy. Richter has very strongly recommended an injection of a decoction of hæmatoxylum.

As a work of practical usefulness, this will rank high among the productions of the present day. The modes of treatment recommended are never operose and of difficult application; but easy, plain, and rational. If we should differ from the ingenious author in some points of theory, or not always feel the force of his illustrations, we readily admit the advantages that every practitioner may derive from the perusal of his "Observations."

III.

Traité des Poisons tirés de Règnes Minéral, Végétal, et Animal, ou Toxicologie Générale, &c. &c. Par M. P. Orfila.

(Continued from page 129.)

Having finished the consideration of metallic corrosives, M. Orfila commences that of the *Concentrated Acids*, which constitute the tenth species of this class of his arrangement. The varieties are the sulphuric, nitric, muriatic, and phosphoric; and, under the title "De quelques autres Acides Minéraux et Végétaux," a concise account is given of the liquid nitrous, the fluoric, the liquid sulphurous, the phosphorous, the oxalic, and the tartaric acids. As the subject is important, we shall follow our author, in his examination of each of these, as closely as our limits will permit.

Sulphuric Acid.—After giving the chemical history of this acid, M. Orfila enters into the consideration of its action on the animal œconomy. This, as might be expected, is of the most powerful nature, and almost always followed by death, whether it be injected into the veins, taken into the stomach, or even applied to the external surface of the body. "Comment," demands our author, "cet acide produit-il la mort?" To re-

solve this question, four experiments, made upon dogs, are detailed; from which the following conclusions are drawn:

"1st. That sulphuric acid injected into the veins destroys life because it coagulates the blood, by exerting on it a real chemical action, which is stronger, as the quantity injected is more considerable. 2d. That, when introduced into the stomach, it occasions immediate death, by producing inflammation, and destroying the organization of that viscus, and by the re-action thus produced upon the brain through the medium of the nerves. 3d. That when this acid is applied to the surface of the body, the animal sinks, either from the first effects of the burn it occasions, or the profuse suppuration which follows it."—p. 80.

To illustrate the symptoms of poisoning by sulphuric acid, four very interesting cases are detailed, which we regret we are precluded from extracting an account of their length; but the following are the general symptoms detailed by our author.

"An austere, styptic, very unpleasant taste; with a sensation of burning in the throat, along the œsophagus and in the stomach; a dull or a sharp pain at the throat, insupportable fœtor of the breath, nausea, and excessive vomitings; the liquid vomited being sometimes black like ink, sometimes red, from its containing arterial or venous blood, and occasioning in the mouth a bitter, very styptic taste, and bubbling upon the spot where it falls. Constipation is generally present; but sometimes there are bloody stools; colic and great pain over the whole of the abdomen, which is occasionally so tender, that any pressure of the hand, or even of the lightest substances, cannot be endured; pains in the chest, difficult respiration, anxiety; the pulse frequent, small, concentrated, irregular, and very nervous; a constant feeling of cold on the surface of the body; horripilatio; extreme weakness; and such restlessness and agitation as to render it impossible to remain for an instant in the same position; the countenance is at first a little altered, and afterwards completely changed; convulsions of the muscles of the face and lips take place; sometimes a papulous eruption of the skin presents itself; but the patient throughout continues to possess the free exercise of his intellectual faculties. The uvula, the tonsils, the velum palati, and all the parts of the mouth, are often covered with white or black eschars, which, falling off, irritate and torment the patient, occasioning a fatiguing cough; and an alteration of the voice, resembling that which characterizes croup."—p. 89, 90.

When sulphuric acid has been taken as a poison, if any of the dose remain in an unmixed state, it can be readily recognized by its specific weight, by the effect produced when it is mixed with cold water, or when barytic water is added to it; and by its decomposition when boiled with mercury. If it be found combined with wine or vinegar, the presence of the acid may be detected by adding chalk as long as any effervescence is produced; and after slightly washing the insoluble sulphate

of lime which remains on the filter, boiling a portion of it with distilled water, and to the clear solution adding barytic water or muriate of barytes, by which a sulphate of barytes is obtained insoluble in water or nitric acid. Or the sulphate of lime may be calcined with a fourth of its weight of finely powdered charcoal, by which the sulphuric acid is decomposed, and the sulphuret of lime produced.

" If the acid be not found, but suspected to be in the fluid vomited, or in the contents of the stomach, one portion of these should be boiled with some metallic mercury, to obtain sulphurous acid gas; and the remainder saturated with carbonate of lime, to procure sulphate of lime, which should be treated as has been already described. Barytic water and the salts of barytes are of no use unless these precautions be taken; for some of the sulphates are always present in the stomach."—p. 93.

In answer to the question, " *Existe-t-il quelque contrepoison de l'acide sulfurique?* M. Orfila concludes, from some experiments which he made upon dogs, that *calcined magnesia*, an antidote proposed by M. Pelletier, and employed in the case of a man poisoned by sulphuric acid by M. Desgranges, is justly entitled to that appellation. When, however, it cannot be obtained, a solution of soap in water may be substituted; and in every case, until other remedies can be obtained, the patient should be made to swallow large draughts of cold or tepid milk. Every thing depends on the activity of the practitioner—

" Quelques instans de retard changent complettement le sert du malade, puisque l'acide sulfurique détruit les tissus organiques avec une promptitude effrayante."—p. 97.

After the acid has been neutralized by the magnesia, and rendered inert, the local symptoms must be treated in the manner usually employed in extensive inflammation and abrasion of the *primæ viæ*.

Nitric Acid.—None of the acids have been more frequently employed as a poison than nitric acid; and none is so easily recognized, both by its physical and its chemical qualities. Death is produced by it from nearly the same causes as when sulphuric acid is taken; and the symptoms excited are not materially different. Our author enumerates the following, as the more usual manner in which cases of poisoning by this acid terminate:

" 1°. By death, which takes place a few hours after taking the poison. 2°. By death, which happens some considerable time afterwards; the patient perishing insensibly. In this case he vomits, at intervals, shreds of membrane, which have sometimes the form of the entire stomach and œsophagus and exhale an insupportable fœtor: the dejections are attended with extreme pain, and the bowels are sometimes locked up for whole months. 3°. The patients

may live, but drag out the remainder of their days, being never completely cured, and suffering occasionally very severe pains and heats. It is speaking of such individuals that Zachias says, *Venena nisi occidant, relinquunt semper aliquam noxam, et morbos diuturnos.* 4c. By complete recovery."—p. 122.

A very clear exposition of the alteration of texture produced by nitric acid, when it immediately proves fatal, after being taken as a poison, is given by our author. The more remarkable feature, and that which is characteristic of this acid, is a layer of yellow matter which covers the mucous membrane of the parts over which it passes; "qui parait," says M. Orfila, "formée à la fois par l'albumine concrète et par la membrane muqueuse altérée d'une maniere particuliere."—p. 123.

The mode of ascertaining whether nitric acid be the poison which has been taken, is minutely described. In the first case, "*L'individu est vivant; on peut agir sur les restes du poison;*" besides examining the state of the lips, chin, and hands of the patient, to discover whether any orange-coloured spots appear on them, if the portion of the poison which remains be free from mixture, we must, after ascertaining that it is an acid, by its reddening tincture of litmus, try it by means of a piece of copper, which, if it be nitric acid, will be immediately changed into nitrate of copper, of a blue colour, with the disengagement of orange-yellow fumes. If more proof be wanting, the remaining acid may be saturated with potass, the compound evaporated to dryness, and the resulting salt tested by the fire and sulphuric acid; "s'il se comporte comme les nitrates, on pourra affirmer que l'acide dont on veut determiner la nature est réellement de l'acide nitrique."

But the acid may have been mixed with wine, vinegar, or tea; in which cases the above tests will be insufficient for ascertaining the fact, unless the following processes be employed. If the wine of the mixture be Burgundy, a piece of copper put into it undergoes no change at the ordinary temperature of the fluid; but when it is heated, the red colour of the wine changes to a yellowish white; effervescence then commences, the copper dissolves, and the fluid assumes a very beautiful green colour; but it is only towards the end of the process that orange-yellow vapours are disengaged, which have the odour of both nitrous acid gas and nitric æther.

As Burgundy is the only wine mentioned by our author, on repeating his experiments, we used Port and Madeira, and found that the result was the same as he obtained with Burgundy, except that no orange fumes were disengaged at the close of the process. The green colour however is sufficient to detect the presence of the nitric acid; for neither the sulphuric, muriatic, nor acetate acids when mixed with wine, and boiled

over copper filings, produce that effect. The colour produced by Madeira is a deeper and more beautiful green than that by Port; probably owing to the greater quantity of tartar in the latter wine; which occasions the formation of a very pale green tartrate of copper which is insoluble, and adheres to the side of the phial, thereby diminishing the proportion of the subnitrate to which the green colour of the solution is to be attributed.

In the second case, "*L'individu est vivant; tout le poison a été avalé; on peut agir sur la matière des vomissemens,*" no judgment can be drawn from the colour or appearance of the substances vomited, as these vary according to circumstances; they must therefore be submitted to chemical examination. In the first place, the supernatant fluid must be separated from the more solid matters by decantation, or, if very small in quantity, by filtration or compression through a linen cloth, and tested by tincture of litmus, copper filings, and caustic potass, as already described: but if the acid be apparently very largely diluted, the separated fluid should be boiled until a sufficient quantity of water be driven off to bring the acid to the proper state of concentration before testing it. The fluid contents of the stomach, however, may not indicate, when tested, the presence of nitric acid, although it may nevertheless have been the poison employed, owing to its combining with albumen, and the solid aliment contained in the stomach at the time of swallowing it. In this case, M. Orfila advises a portion of these solid contents to be put into an apothecary's phial, and boiled for three hours with a solution of pure potass. The fluid, which will be found on filtering it of a red colour, must then be evaporated in a porcelain capsule; and the dry mass remaining boiled with a sufficient quantity of strong alcohol. If nitric acid has been the poison employed, the residue will be chiefly nitrate of potass, which may be easily known by deflagration taking place when it is thrown upon burning coals.

In the third case, *L'individu est vivant; tout le poison a été avalé; on ne peut pas se procurer la matière des vomissemens,* no aid can be obtained from chemistry: and in the fourth, *L'individu est mort,* its assistance is not required, as the appearance of the body, when opened, is sufficient to ascertain whether nitric acid has been the poison employed.

"The yellow hue," says our author, "which is communicated to the lips, the chin, and a large portion of the alimentary canal; the conversion of the mucous membrane into a fatty substance, the perforation of the stomach and an effusion of a turbid yellow-coloured fluid into the cavity of the abdomen, are so many characteristic signs, the simultaneous appearance of which can be pro-

duced only by this acid; and, as they have presented themselves in every fatal case produced by its action, they may be regarded as sufficient to authorize us to decide with certainty, that the poisoning has been the effect of swallowing nitric acid or aquafortis."—p. 128.

Existe-t-il quelque contre-poison de l'acide nitrique? In answering this question, M. Orfila, from the results of many experiments, asserts, that *calcined magnesia*, which was suggested by M. Tartra, is entitled to this appellation, being equally beneficial in poisoning by nitric acid, as by the sulphuric. Soap, chalk, and the alkalies may also be employed; but the first of these is preferable, as in the exhibition of the earthy carbonates much inconvenience arises from the extrication of the carbonic acid; and the neutrals formed by the alkalies, act too powerfully on the stomach. As soon, therefore, as it is ascertained that aquafortis or nitric acid has been swallowed as a poison, a solution of soap should be exhibited, until calcined magnesia can be obtained; which should then be given in large doses suspended in water. The stomach at the same time must be urged by large draughts of demulcent fluids to evacuate itself; and afterwards bleeding, purging, and other antiphlogistic measures resorted to as the symptoms may indicate.

Muriatic Acid. The best test for detecting this acid in its pure state, or simply diluted with water, is nitrate of silver, which also instantly detects the presence of any of the muriates when in solution. The precipitate, which is muriate of silver, is soluble in ammonia, but not in nitric acid. M. Orfila condemns, however, the mode of testing, by nitrate of silver, wines or vinegars which are suspected to be the vehicles of this acid administered as a poison; for if these liquids contain any portion of even muriate of soda, the same effect is produced as if free muriatic acid were present. He therefore directs the suspected liquor to be heated in a retort, to which a receiver containing distilled water is adapted, and the contents of the receiver only to be tested with the nitrate. But as simplicity of apparatus is of great importance in these cases, we would recommend, instead of a retort and receiver and the distillation described by M. Orfila, the following simple mode of employing this test. Let two apothecary's phials be fitted with corks, through each of which pass the extremity of a curved tube, in such a manner that one end of the tube will reach nearly to the bottom of one phial, while the other end will penetrate the cork only of the other phial: a broken thermometer tube, heated in the flame of a candle, and bent, will answer this purpose. The phials being thus made to communicate, into one of them put the wine suspected to contain the acid, and into the other a clear solution of nitrate of silver, the surface reaching above the

open end of the tube; on heating the phial containing the wine, the acid will be volatilized, and shew itself by passing over into the other end, instantly forming there muriate of silver.

The effects produced by muriatic acid on the animal œconomy, are similar to those by the other two mineral acids; the symptoms are also similar, except that a thick white-coloured vapour, having the odour of the acid, issues from the mouth, soon after a considerable quantity of it has been swallowed.

What has already been stated, is sufficient to show the mode of detecting this acid when employed as a poison, if a portion of the dose be obtained in a free state, or in combination with wine or vinegar: but, when it is united with insoluble matters, either vomited or found in the alimentary canal after death;

"—caustic potass, perfectly free from muriates, must then be employed as a test. The whole of the substances, heated with distilled water and this alcali, ought to furnish, after having been boiled for three quarters of an hour, a fluid in which nitrate of silver will demonstrate the presence of muriatic acid, if they have really contained this corrosive."—p. 142.

Magnesia and *Soap* are, also, the best substances for neutralizing this acid in the stomach; and, therefore, may be regarded as its antidotes when exhibited in proper time.

Phosphoric Acid, says M. Orfila, is easily known by producing, with barytes, strontian, and lime waters, a white precipitate, which is soluble in pure nitric acid; that produced by sulphuric acid being insoluble. But this character does not distinguish it from oxalic acid in solution, which also yields, with these tests, a white precipitate soluble in nitric acid: a more certain test, therefore, is the acid proto-muriate of cobalt, when it can be obtained. This salt, dissolved in water, and added to a solution of phosphoric acid,

"—does not render it turbid; but if a small quantity of ammonia be added to the mixture, a beautiful rose-coloured precipitate, the proto-phosphate of cobalt, is instantly produced. A few drops of alkali decompose this phosphate, detaching the phosphoric acid, while the precipitate passes to the state of prot-oxide of cobalt, of a blue colour inclining to violet."—p. 144.

Fluoric Acid, when exposed to the air, exhales white vapours, not unlike those of muriatic acid; but is easily distinguished by producing a noise resembling that occasioned by plunging red-hot iron into water, with the disengagement of much caloric, when water is added to it. It corrodes glass.

Oxalic Acid is known by its white, needle-form, lamellar crystals. Exposed to heat in a phial, it volatilizes under the

form of small crystals, leaving scarcely any carbonaceous residue. Its solution in water precipitates lime water, and all the calcareous salts; the precipitates being soluble in nitric acid, but not in an excess of oxalic acid.

Tartaric Acid is readily distinguished from the oxalic by heating it in a phial; when, instead of subliming in crystals, it is decomposed like vegetable matter; it blackens, smokes, swells, exhales an acrid, sharp vapour; and burns with a blue flame, leaving a large proportion of spongy charcoal. It is, also, distinguished when in solution, by the white precipitate produced with lime water being soluble in an excess of tartaric acid, as well as nitric acid.

The symptoms produced by large doses of these acids taken into the stomach, their effects on the animal œconomy, and treatment of cases of poisoning by them, as well as by the sulphurous, nitrous, and phosphorous acids, which are shortly noticed by our author, being analogous to those of the three stronger mineral acids, are not particularly detailed.

We are much surprised that our author has neglected to enumerate among the acid poisons, the *prussic acid*, which has been found to be more virulent than any other known poison, producing almost instantaneous death even when applied in small quantity to the surface of the body.

The eleventh species of this class comprehends the alkalies and their carbonates. It contains three varieties:

" 1. Potass, caustic or carbonated.
" 2. Soda, caustic or carbonated.
" 3. Ammonia, caustic or carbonated."

The latter of these salts is readily distinguished by its odour. The two former are familiar to all in their solid form; but their chemical characters, when in solution, closely resemble each other, and, as their action on the animal œconomy also corresponds, except for the accuracy of evidence in a criminal court, it is scarcely sufficiently important to point out their individual effects on re-agents. Both of them feel soapy to the touch; change to green the vegetable reds and blues; carbonic acid gas or water containing it, added to their solutions, do not render them turbid, a feature by which they are distinguished from barytes, strontites, and lime; and nitrate of silver is precipitated by both in form of a dark-coloured oxide, soluble in nitric acid. The best mode pointed out by our author, for ascertaining whether the alkali in solution be potass or soda, is first to neutralize with sulphuric acid; then, to the solution of the sulphate thus prepared, to add a saturated solution of acidulous sulphate of alumen, which, if potass be the alkali, will rapidly produce a deposition of small white crystals of

alum; but, if soda, no such effect will be produced. In our opinion, a simpler method is the evaporation of the solution to dryness in a silver spoon; after which, by exposing the mass to the air, if the alkali be potass it will rapidly deliquesce, but remain dry if soda. Effervescence with acids, and the becoming milky on the addition of lime water, readily ascertain whether the alkalies in solution are carbonates.

Either of these alkalies, when taken in doses sufficiently large to operate as a poison, produce violent and generally fatal inflammation of the first passages, marked by the following symptoms:

"The taste acrid, urinous, and caustic; great heat of the gullet, nausea, and vomiting of a bloody, alkaline matter, which changes to green syrup of violets, and effervesces with acids: copious alvine dejections, acute pain of the stomach (epigastralgie), violent colic, convulsions, derangement of the intellectual faculties."—p. 157.

Vinegar is the antidote of these alkaline poisons. M. Orfila illustrates this fact by a detail of several experiments made on dogs; but the following case of M. Barruel, chemical operator to the School of Medicine at Paris, which he also details, has more weight with us than any experiments on the lower animals, although the poison was not introduced into the stomach. This gentleman had inadvertently taken a mouthful of a solution of pure potass in alcohol;

"Instantly, on experiencing the sensation of burning, and an acute pain over the different parts of the mucous membrane which lines the mouth, he had recourse to vinegar; which immediately saturated all the free alkali; and instead of the painful symptoms increasing, they gradually diminished, the corrosive producing the slightest inflammation only of the mucous membrane."—p. 160.

If the alkaline poison be *ammonia*, it is readily detected by its odour, and changing the syrup of violets green. Vinegar may be used in this case also; but little benefit can be expected, if the antidote be not instantly resorted to, as ammonia soon acts powerfully on the nervous system and proves mortal, independent of the corrosive properties which it possesses in common with the other alkalies.

The twelfth species, the *caustic alkaline earths*, comprehends two varieties only;

"1. Barytes.
"2. Lime."

M. Orfila calls the attention of practitioners particularly to barytes and its compounds, as being poisons of the most virulent description:

"—il est," says he, "de la plus haute importance que les médecins qui cherchent à les employer dans les affections scrophuleuses,

lymphatiques, &c. &c. connaissent parfaitement leurs effets et les moyens de prévenir les accidents graves qu'elles développent."

Barytes, perfectly calcined and solid, very closely resembles lime in its action on water and the vegetable colours; but it is of much greater specific gravity. In solution it is more readily distinguished by the white precipitate insoluble in water and nitric acid, which is produced by sulphuric acid and all the sulphates, even when the solutions of these salts are much diluted.

Carbonate of Barytes differs from the calcined earth, "1º, by its insolubility in water; 2º, by the effervescence it produces when dissolving in nitric and muriatic acids."

Muriate of Barytes, in its solid form, is characterized by its crystals, which are quadrangular tables, or prisms, bevelled on the edges. Its solution, which is colourless and transparent, is not altered by the addition of ammonia, although the carbonate of ammonia and the carbonates of the other alkalies throw down a white precipitate, which is carbonate of barytes. Nitrate of silver added to the solution, instantly produces a copious precipitate of muriate of silver; but the hydrosulphurets of the alkalies prepared with distilled water produce no alteration on it, a feature which distinguishes the solution of this muriate from the solutions of all the metallic poisons. We are rather surprised, that our author has not noticed, as a test, the solubility of muriate of barytes in alcohol, and the yellow tinge which it gives to the flame of the alcohol in burning.

In treating of the action of the different compounds of barytes on the animal œconomy, our author notices first that of *muriate of barytes*. Two experiments made by himself, and three, extracted from the Philosophical Transactions, made by Mr. Brodie, are detailed; and the following conclusions drawn from them.

"1º. Muriate of barytes, injected into the veins, produces death, by acting upon the nervous system and coagulating the blood. 2º. That when this salt is applied to the surface of the body, or taken into the stomach, it is absorbed and carried into the circulation, producing the same effect; while at the same time it produces inflammation of the tissue with which it comes in contact. Mr. Brodie infers, from the two experiments he made, that muriate of barytes produces death by acting on the brain and heart."—p. 176.

From experiments on dogs who were made to swallow *carbonate of barytes* in the form of powder, M. Orfila is of opinion, that this salt produces death by acting on the nervous system; corroding, at the same time, the viscera with which it comes in contact.

In endeavouring to answer the question, "*Existe-t-il*

quelque contre poison de la baryte et muriate de baryte?" M. Orfila, reflecting that the soluble sulphates might be the substances most likely to destroy the energetic action of these poisons, first determined by experiment that sulphate of barytes does not act as a poison when taken into the stomach of a dog; and, afterwards, that sulphate of soda given after muriate of barytes checked its powerful action; and thence infers,

"—that the *soluble sulphates* are counter-poisons of muriate of barytes, if administered before a quantity of that salt sufficient to exert its fatal influence on the nervous system be absorbed."—p. 182.

A practitioner, therefore, having ascertained that muriate of barytes has been employed as a poison, must instantly exhibit large doses of solutions of Glauber or of Epsom salts. Copious draughts of well water, also, which generally contains sulphate of lime, should be swallowed; and vomiting excited by irritating the fauces, and even by an emetic to expel any of the poison still remaining. The other parts of the treatment must be regulated by the symptoms.

Lime.—Our author is of opinion that *quick lime* is not a very powerful poison when taken into the stomach; and that it produces its deleterious effects simply by inflaming the viscera with which it comes in contact. It is easily recognised, when taken as a poison, by the following circumstances:

"Lime in a pure state is soluble in water; its solution changes to green, the colour of syrup of violets; it is precipitated white by the carbonic and oxalic acids; while no change is produced on its solution by sulphuric acid."—p. 185.

M. Orfila regards *vinegar* as the antidote of lime when taken as a poison; and recommends the patient to be treated in the same manner as if he had taken caustic soda or potass.

Phosphorus forms our author's thirteenth species. Although he allows that this combustible has not been employed directly as a poison, yet, he is led to regard it in this light, to guard against the incautious use of it as a remedy, instances being on record in which it has produced death in a short space of time.

The physical properties of phosphorus are well known. In endeavouring to ascertain its action on the animal œconomy, M. Orfila repeated the experiment of M. Majendie with phosphorus dissolved in oil; only injecting it into the jugular vein, instead of introducing it between the pleuras; and obtained nearly the same results. The phosphorus was carried through the pulmonary circulation, and expired by the mouth and nostrils in the form of phosphorous acid. From three experiments made upon dogs, our author was enabled to draw the following conclusions regarding its effects when taken into the stomach.

" 1. That phosphorus introduced into the stomach, produces death, by occasioning a greater or less degree of inflammation of different parts of the alimentary canal, which, if intense, sympathetically disorders the nervous system. 2°. That it produces these effects by combining with the oxygen of the air contained in the alimentary canal, forming phosphorus acid, and probably phosphoric acid; so that the corrosion must be attributed to these acids. 3°. That, when phosphorus is introduced into the stomach in cylinders, it always forms phosphorous acid, which corrodes the membranes with which it is in contact; and, as it passes progressively from the stomach to the rectum, the inflammation is more marked in the spots where the greatest portion of phosphorous acid has been formed. 4. That the combustion is slower when the stomach contains a greater quantity of food. 5. Finally, that death almost instantly follows, when the phosphorus is minutely divided in oil; the combustion being more rapid, and the animal dies in the most horrible convulsions."

The alliaceous odour of phosporus, its property of smoking when exposed to the atmosphere, and its other well-known combustible properties, lead to the immediate detection of this substance when exhibited as a poison. With regard to the treatment; if it has been taken in the solid form, two or three grains of tartar emetic should be instantly exhibited, to evacuate the poison before it has time to act: but if it has been in a state of minute division, the patient should be made to swallow copious draughts of water containing *magnesia*. M. Orfila gives the following reasons for recommending this practice:

" 1°. By filling the stomach with liquid, the atmospheric air is expelled, and the phosphorus consequently burns with less rapidity. 2°. By thus distending the stomach, vomiting is produced, without adding to the irritation already excited by the poison. 3°. The phosphorous and phosphoric acids formed are saturated by the magnesia, and consequently prevented from corroding the parts with which they come in contact."—p. 197.

Antiphlogistic and other remedies are indicated, when these first steps fail to afford relief.

The fourteenth article treats of *powdered glass* and *enamel*; but it has been, by no means, correctly ascertained that the mechanical irritation of these substances produce any deleterious effect on the alimentary canal, unless swallowed in large pieces.

The fifteenth and last species of the *corrosive poisons* noticed by our author is *cantharides*, which he examines at very considerable length.

After giving a brief description of the blistering fly, M. Orfila details the result of M. Robiquet's observations and experiments, as the best account of its physical and chemical pro-

perties; but does not notice the analysis of Thouvenel and Beaupoil. M. Robiquet affirmed that the epispastic principle of this insect may be obtained distinct, in the form of small white crystalline plates, not unlike spermaceti in appearance, insoluble in water, unless united with a viscid yellow matter existing in the insect; but soluble in alcohol and oil.

In considering the action of cantharides on the animal œconomy, several interesting experiments on dogs are detailed, and the following conclusions drawn from them.

"1°. That that part of cantharides which is soluble in oil of sweet almonds, when injected into the veins, acts upon the nervous system, and particularly upon the vertebral column: 2°. That this insect introduced into the stomach, corrodes and quickly occasions death, by intensely inflaming that viscus and acting on the nervous system: it also inflames the internal coat of the bladder, when it remains some hours in the stomach (habit) before destroying life. When externally applied, it sometimes kills by the same action which it exerts when introduced into the stomach.

Illustrative of the symptoms of poisoning by cantharides, six curious and instructive cases are detailed from the works of Cabrol, Ambrose Pare and other authors, which we regret our limits prevent us from extracting, although some of them contain details well calculated to try the extent of our credulity. The general symptoms are thus described:

"A sickly fœtid odour, disagreeable acrid taste, nausea, frequent vomiting, and copious, often bloody, alvine dejections; very acute epigastralagia, writhing colic, and severe pains in the hypochondres; heat in the bladder; the urine sometimes bloody; an obstinate and very painful priapism; the pulse quick and hard; ardent thirst, with a very uncomfortable sensation of heat; occasionally a horror of liquids; frightful convulsions, tetanus, delirium, &c. &c.—p. 228.

Cantharides employed as a poison is easily detected, if a portion of the powder, in an unmixed state, can be procured; and it may even be discovered by its beautiful green, shining particles, in the matter rejected by vomiting, or contained in the stomach after death. But notwithstanding these features, and its chemical properties, we must often rely altogether on the train of symptoms in giving our opinion that cantharides has been swallowed.

No antidote has yet been discovered for the poison of cantharides; we are, therefore, obliged to direct our remedies according as the various symptoms arise, after endeavouring to evacuate the poison, and to obtund its acrimony by copious draughts of oil, milk, and emulsions.

Having concluded the first class of his arrangement, M. Orfila enters upon the consideration of the second:—the Astringent Poisons; so denominated from their occasioning a marked contraction or narrowing of the larger intestines, particularly the colon; although at the same time they excite inflammation of the alimentary canal, and frequently extend their action to the nervous system. This class comprehends one species only, the preparations of *Lead*, of which our author enumerates the following varieties:

"1. Acetate of lead.
"2. Red oxide of lead, litharge.
"3. Carbonate of lead, cerussa.
"4. Wines sweetened by lead.
"5. Water impregnated with lead.
"6. Food cooked in leaden vessels.
"7. Syrups and brandy clarified with acetate of lead.
"8. Saturnine vapours."

The bare enumeration of these varieties is sufficient to shew the importance of this part of our author's labours; and we regret that the unusual length to which this analysis has already extended, prevents us from going minutely into the subject.

After describing the properties of metallic lead, and observing that the pure metal is not poisonous, M. Orfila enters upon the examination of its compounds, of which all those marked as varieties act nearly in the same manner on the animal œconomy; their deleterious effects arising more from their action on the nervous system than on the alimentary canal. The resulting symptoms in every instance so closely resemble those of *colica pictonum*, that we do not conceive it to be necessary for us to enumerate them. These preparations of lead introduced into the stomach and producing accidents, are easily detected when unmixed with other substances, by the facility with which they are reduced to metallic lead, on exposure to heat in a crucible with charcoal; and by the following effects of tests. Sulphuric acid produces a copious white precipitate, which, when dried and heated with potass or charcoal, yields metallic lead: chromic acid and chromate of potass throw down an insoluble chromate of lead of a beautiful canary-yellow colour: muriatic acid and the muriates occasion a white curdy precipitate, soluble in thirty or forty times its weight of distilled water. When mixed with wine, the preparations of lead may be detected by the same re-agents; but more particularly by evaporating the wine, and calcining the residue with charcoal to obtain metallic lead; and the latter method may be employed when they are united in any other vehicle. When the matters vomited or found in the stomach after death can only be obtained, the mode of de-

tection on which the practitioner can alone place confidence, is calcination; the salts of lead being decomposed by almost every substance which is taken into the stomach as aliment.

In answer to the question "*Existe-t-il quelque contre-poison des préparations saturnines dans l'estomac?*" our author puts the opinion of Navier, that the alkaline sulphurets deserve that appellation, to the test of experiment, and concludes that although the sulphuret of potass decomposes acetate of lead in the stomach, and changes it to an insoluble sulphuret, yet, that it does not prevent the death of the animal. From other experiments, however, he is of opinion, that

"1°. Sulphate of lead may be swallowed with impunity in considerable doses.

"2°. That sulphate of magnesia decomposes acetate of lead contained in the stomach, changing it into insoluble sulphate of lead.

"3°. That sulphate of magnesia in *sufficient quantity* destroys the corrosive quality of this poison.

"4°. That sulphate of magnesia is the true counter-poison of acetate of lead."—p. 283.

Our author concludes, that the other saturnine compounds are also likely to be decomposed by sulphate of magnesia or any other soluble sulphate; and thence advises, that the first attention of a practitioner, on being called to a patient poisoned by any salt of lead, should be directed to the exhibition of large quantities of water containing three or four gros (from ʒiiij. to ʒss.) of sulphate of magnesia, or of soda, or potass, in every pint. He thinks, however, that a different treatment is required in cases of poisoning by saturnine vapours, which he assigns as the cause of painter's colic. The plan he recommends, is that which is adopted at the Hospital *de la Charité* of Paris; but as both the cause and the management of this disease is so much better understood on this side of the channel, we think it unnecessary to enter upon the subject.

In an appendix, M. Orfila examines the action of *iodine* on the animal œconomy; and from some experiments upon dogs and on himself concludes, that in small doses it proves emetic, and in very large doses operates as a corrosive poison. He also examines the opinions of M. Bertrand, regarding the use of charcoal as an antidote in cases of poisoning by corrosive sublimate and arsenic, lately published*, and affirms, "*that neither charcoal nor charcoal water can be regarded as counter-poisons of corrosive sublimate and arsenious acid.*"

Having now finished our analysis, which may in some degree be regarded as an abridgment of these valuable volumes, it might be expected that we should conclude with an expression of unconditional approbation. This, however, cannot be;

* Vide *Journal Général de Médécine, Decembre* 1813.

for although we prize highly the labours of M. Orfila, yet we conceive he has erred in drawing the majority of his conclusions with so much confidence from experiments confined solely to dogs. Linnæus long ago demonstrated, that vegetables which operate as poisons to one species of animals may be eaten with impunity by others; and it is not improbable that the same may hold with regard to other poisons. It is certain, also, that the stomach of man and of dogs is variously affected by the same substances. In translating the work, therefore, (we understand two translations are already in progress,) this should be kept in view; and we trust, that much more than a mere English version of it will be given; that the author's experiments will be repeated and varied, and his conclusions pertinaciously examined. This will be a very difficult task; but the merits of M. Orfila demand that he should be introduced to his brethren in this country, in a manner befitting our boasts of the advanced state of English medical science.

III.

Medico-Chirurgical Transactions. Published by the MEDICAL and CHIRURGICAL SOCIETY of London. Volume the Fifth. 8vo. pp. 546. Eight Plates. Longman and Co. 1814.

(Continued from p. 133.*)*

IV. "*Case of Cartilaginous Substances successfully extracted from the Knee Joint.*" By John Clark, M. D.—A serjeant in the King's German Legion, two years after a severe rheumatic attack which affected his joints in succession, had a considerable enlargement of the left knee: there did not appear to be any morbid state of the bones or ligaments, but there was evidently an increased quantity of fluid within the articulation. The complaint in the knee was one or more cartilaginous substances lying loose within the joint, and which, when accidentally shifted into particular situations, produced the following symptoms:

"He could generally begin to walk, without experiencing any other inconvenience, than a sense of weakness in the affected joint, which caused a slight lameness; but on continuing the exercise, he would instantaneously fall to the ground, as if he had received a shot, or severe shock of electricity. The pain he experienced on these occasions must have been considerable; for though a fine manly fellow, it generally obliged him to call aloud. He compared the pain to a sharp instrument pushed quickly through his knee, and said it was more acute than any thing he had ever felt. These accidents occurred to him sometimes twice in the same day, or oftener. I had seen him several times so affected, when he was instantly induced to apply his hand to the spot where he felt the pain, and could

not admit of the slightest motion of the leg until he had pushed back a small hard substance, which he said protruded from the cavity of the knee joint."

After some unavailing palliative attempts had been made, it was determined to extract these substances from the joint by an incision made into its cavity. At three different periods, three cartilaginous substances were thus extracted; no unfavourable symptoms occurred, and the man completely recovered in a very short period, without having experienced any of that serious inflammation which has been always expected to arise from cutting into the cavities of any of the large joints*.

V. "*Account of the Extraction of a loose Substance, consisting partly of Bone and partly of Cartilage, from the Elbow-joint.*" By John Millman Coley, Surgeon.—This is a case similar to the preceding; and the patient recovered with equal facility.

VI. "*Account of a Chemical Examination of the Urine and Serum of the Blood of a Person who had been taking large Quantities of Soda.*" By John Bostock, M.D.—A young lady, who had symptoms of phthisis pulmonalis, began with taking ʒss. of the subcarbonate of soda daily. This dose was progressively increased to ʒiss. ʒij. ʒiiss. and finally to ʒiij. She was not able to persevere in taking this large quantity on account of the vomiting it excited, but continued to take ʒijss. daily for a considerable length of time. Each ounce of the salt was dissolved in about a pint of water; she drank two or three quarts of water during the day. The urine was very copious, and the appetite and strength were much improved; the medicine did not appear to have produced any other sensible effect. During this period Dr. Bostock made the experiments which afforded the following results.

Composition of the Urine.

Entire Urine.		Solid Contents.
Water	759	
Urea united to a fixed alkali.	142.5	57
Muriate of ammonia		
Phospate of soda	93.75	37.5
Muriate of soda		
Phospate of lime	13.75	5.5
Albumen		
	1000.00	100.0

* A very successful case of this operation, by Mr. Williams, appears in the second article of the *Original Communications* in the present Number, p. 190.

The peculiarities of the blood, as manifested by Dr. Bostock's experiments, were an unusual quantity of uncombined alkali—an unusual colour of the serum, especially after coagulation, and the action of muriates and oxymuriates of mercury upon it—the existence of a substance which had not before been observed in blood, of an adipocerous nature, and of a creamy substance, which was separated from the serum when it began to putrefy, which, both in its sensible and chemical properties, very much resembled pus. Notwithstanding the alkalescent nature of this, it was in a highly inflamed state.

VII. "*Case of Laceration of the Internal Coat of the Duodenum and Stomach.*" By Thomas Chevalier, Esq. F.L.S.—A boy, 14 years of age, on a Saturday evening, ate heartily, and drank freely of gin and water: on the evening of the following day he became sick, and vomited violently. At two o'clock on Monday afternoon, he became short-breathed, unable to swallow, and felt great anxiety, with almost continual efforts to vomit. On Tuesday, about noon, Mr. Chevalier saw him:

"His appearance," says Mr. C. "was then extremely affecting; his countenance was flushed and turgid; his breathing anxious and interrupted; his pulse very irregular, and his extremities cold. He complained of great uneasiness at his heart, which was increased by pressure near that viscus, the action of which consisted in the successive repetition of three irregular strokes; the first rather violent, the second feeble, and the third still more so. His attempts to vomit were frequent and most distressing, and generally terminated in the discharge of white froth. When he attempted to drink, the effort to swallow was accompanied by a violent and agonizing spasm of the pharynx, which made him dash the cup from his hand. Pressure on the region of the stomach, particularly towards the right side, occasioned him a great increase of pain and an immediate recurrence of the efforts to vomit. Towards the evening he vomited in successive efforts near two pints of blood; after this he became easier, and said he should like to eat something; toasted bread was given him, of which he ate two pieces rather eagerly, but the vomiting speedily returning, he threw up what he had eaten, and soon after this a quantity of something which he said was so bitter it was enough to kill him. Almost immediately after this he expired."

Examination *post mortem* discovered that the internal coat of the stomach and duodenum were lacerated in various places. The lacerations were much larger in the duodenum than in the stomach. This circumstance was hardly to be expected, as the lesion of parts may be supposed to have been produced by the severe vomiting.

VIII. "*On Contractions after Burns, or Extensive Ulcerations.*" By Henry Earle, Esq. Surgeon to the Foundling.—The impediments arising to action of the limbs, and the accompa-

ying deformity, after burns especially, is a frequent source of regret to surgeons, and of dissatisfaction to patients and their friends. Mr. Earle has here made some ingenious remarks on this subject, and which will probably lead to a more successful practice.

IX. "*The History of a Child retained in the Mother Fifty-two Years after the usual Period of Utero-gestation.*" By Richard Browne Cheston, M.D. F.R.S.—This history exhibits a fœtus, after arriving at the uterus from the seat of its original formation, remaining nine months, and acquiring the full size in that organ, on the point of being expelled from its cavity, by the process of parturition, when it escapes, in an almost incomprehensible manner, from the uterus, and becomes surrounded by a bony covering, in which it is found at the end of fifty-two years, almost as perfect in its form, as we should expect to find it, if it had been born at the natural period of utero-gestation. The narrative is well written, the dissection and examination of the parts carefully minute, and the reflections upon it ingenious. Three good plates illustrate this eventful history.

X. "*An Account of some Diseases of the Toes and Fingers, with Observations on their Treatment.*" By James Wardrop, Esq. F.R.S. Edin.—This paper is divided into four parts:—1. *Inflammation of the soft parts surrounding the nail of the toes;*—2. *Ulceration at the root of the nail, onychia maligna;*—3. *Of corns;*—4. *Of the treatment of chilblains.* The first of these parts is occupied in describing an exceedingly troublesome disease about the edge of the nail of the great toe, a disease which we have often seen, but which, we believe, has seldom been noticed by writers on surgery. This complaint is described by Mr. W. as follows:

"It frequently happens, when the foot is kept in a tight shoe, that the soft parts situated on the edge of the nail thicken, are pressed over it, and become more or less inflamed and painful. If the inflammation and thickening of the soft parts increase, the edge of the nail becomes at last completely imbedded in them, and its sharp edge, from the pressure of the body when resting on the foot, increases the inflammation, and produces suppuration of the contiguous soft parts. Thus the hard and sharp nail, by pressing on the surface which has become ulcerated, causes great pain and lameness, and in many cases prevents the person from walking. The ulceration generally extends round a considerable part of the nail, and a fungus arises from this surface, accompanied by excessive irritability."

It is here asserted, that an altered condition of the soft parts gives origin to this complaint, and that an application or two of lunar caustic to those parts is an effectual remedy. Our

observation has led us to conclude, however, that it has often arisen from an inadvertent shortening of the external corner of the nail. Certain it is, that the whole of the painful part of the disease arises from this part of the nail being buried in the flesh: and that the cure is effected by the growth of the nail being extended over the flesh. With us caustic has often failed; and then the removal with a scalpel of that portion of the flesh in which the nail was buried, has been effectual. The second part treats of a more severe disease, *onychia maligna.*

"The commencement of this disease is marked by a degree of swelling of a deep red colour of the soft parts at the root of the nail. An oozing of a thin ichor afterwards takes place at the cleft formed between the root of the nail and soft parts, and at last the soft parts begin to ulcerate. The ulcer appears on the circular edge of the soft parts at the root of the nail; it is accompanied with a good deal of swelling, and the skin, particularly that adjacent to the ulcer, has a deep purple colour. The appearance of the ulcer is very unhealthy, the edges being thin and acute, and its surface covered with a dull yellow or brown-coloured lymph, and attended with an ichorous and very fetid discharge. The growth of the nail is interrupted, it loses its natural colour, and at some places appears to have but little connection with the soft parts. In this state I have seen the disease continue for several years, so that the toe or finger became a deformed bulbous mass. The pain is sometimes very acute, but the disease is more commonly indolent, and accompanied with little uneasiness. This disease affects both the toes and the fingers. I have only observed it on the great toe, and more frequently on the thumb than any of the fingers. It occurs, too, chiefly in young people, but I have also seen adults affected with it."

This appears to be a constitutional disease, and has been cured with mercury, under the care of Mr. Wardrop. When the system is gently affected with the mineral, the healing process commences. A plate accompanies this history. Some observations on corns, and a recommendation of the application of lunar caustic, or a saturated solution of muriate of mercury in alcohol, is contained in the third. The fourth treats shortly of chilblains, and recommends, in the early stage of this troublesome complaint, an embrocation with Tinct. Canthar. one part, and Lin. Sapon. six parts.

XI. "*Observations on some of the Causes which destroy the Fœtus in Utero.*" By D. Stewart, M.D.—As a practical paper, this has considerable value; and if it ascertains, as it asserts, that diarrhœa *almost always* precedes abortion, and that opium introduced into the rectum, by appeasing the intestinal irritation, commonly prevents this accident, it has considerable claims to notice as hinting an improvement in pathology and therapeutics.

(To be continued.)

PART III.

SELECTIONS.

Stone of the Eyes.—"Of all the productions on the coasts of Araya, that which the people consider as the most extraordinary, we may even say the most marvellous, is the stone of the eyes, *piedra de los ojos.* This calcareous substance is the subject of every conversation: according to the natural philosophy of the natives, it is both a stone and an animal. It is found in the sand, where it is motionless; but placed singly on a polished surface, for instance on a pewter or earthen plate, it moves when excited by lemon juice. Placed in the eye, the pretended animal turns on itself, and expels every other foreign substance that has been accidentally introduced. At the new salt works, and at the village of Maniquarez, the *stones of the eyes** were offered us by hundreds, and the natives were earnest to show us the experiment of the lemon juice. They wished to put sand into our eyes, in order that we might ourselves try the efficacy of the remedy. It was easy to see, that these stones are thin and porous opercula, which have formed part of small univalve shells. Their diameter varies from one to four lines. One of their two surfaces is plane, and the other convex. These calcareous opercula effervesce with lemon juice, and put themselves in motion in proportion as the carbonic acid is disengaged. By the effect of a similar re-action, loaves placed in an oven, move sometimes in a horizontal plane; a phenomenon that has given occasion, in Europe, to the popular prejudice of *enchanted ovens.* The *piedras de los ojos*, introduced into the eye, act like small pearls, and different round grains employed by the American savages to increase the flowing of tears. These explanations were little to the taste of the inhabitants of Araya. Nature has the appearance of greatness to man in proportion as she is veiled in mystery, and the philosophy of the people rejects every thing that bears a character of simplicity."—*Vide Personal Narrative of Travels, by Humboldt and Bonpland*, vol. ii. p. 288.

Spring of Naphtha.—"Proceeding along the southern coast, to the east of Maniquarez, we find running out into the sea

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"* They are found in the greatest abundance near the battery at the point of Cape Araya."

very near each other, three strips of land, which bear the names of Punta de Soto, Punta de la Brea, and Punta Guaratarito. In these parts the bottom of the sea is evidently formed of a mica-slate; and it is from this rock, that, near Cape de la Brea*, but at eighty feet distance from the shore, a spring of Naphtha rises, the smell of which spreads itself into the interior of the peninsula. You must wade into the sea up to the waist, to examine this interesting phenomenon. The waters are covered with zostera; and in the midst of a very extensive bank of weeds (d'herbes), we distinguish a free and circular spot of three feet diameter, on which swim a few scattered masses of ulva lactuca. Here the springs are found. The bottom of the gulf is covered with sand; and the petroleum, which, from its transparency and its yellow colour, resembles the real naphtha, rises in jets, accompanied by air bubbles. On treading down the bottom with the foot, we perceive, that these little springs change their place. The naphtha covers the surface of the sea to more than a thousand feet distance. If we suppose the dip of the strata to be regular, the mica-slate must be but a few toises below the sand.

"We have already observed, that the muriatiferous clay of Araya contains solid and friable petroleum. This geological connection between the muriate of soda and the bitumens is evident wherever there are mines of gem salt or salt springs; but a very remarkable fact is the existence of a fountain of naphtha in a primitive formation. All those hitherto known belonging to secondary mountains†; and this situation of them seemed to favour the idea, that all mineral bitumens were owing to the destruction of vegetables and animals‡, or to the burning of coal. In the peninsula of Araya, the naphtha flows from the primitive rock itself; and this phenomenon acquires new importance, when we recollect, that the same primitive rocks contain the subterraneous fires, that on the brink of burning craters the smell of petroleum is perceived from time to time, and that the greater part of the hot springs of America rise from gneiss and micaceous schist."—*Ibid.* vol. ii. p. 290.

"* *Tar cape.* The greatest reservoir of petroleum *(chapapote)* is that of the island of Trinidad, which has been described by Span, Hatchet, Anderson, and Dauxion Lavaysse. (Voy. aux Isles de Trinidad and de Tabago, t. i. p. 24 to 30.)"

"† Pietra mala; Fanano; Mont Zibio; Amiano, where are the springs that furnish the naphtha employed in lighting the city of Genoa; Bakou; &c."

"‡ Hatchet, in the Trans. of the Lin. Society, 1798, p. 129."

PART IV.

FOREIGN MEDICAL SCIENCE AND LITERATURE.

PRACTICE OF MEDICINE AND SURGERY.

I. — Although the records of Pathology contain several histories of spontaneous combustion of the human body, yet, a certain degree of scepticism has always prevailed regarding such relations. Another case of the kind, however, has occurred in the village of Waertelfeld, bailliwick of Schwalenberg, in Germany, so lately as the 17th of January 1811, a detailed account of which has been published by *Dr. Scherf* of Detmold.

The subject of this spontaneous combustion was a man named Ignace Meyer, between 47 and 48 years of age, inordinately addicted to the use of ardent spirits; a circumstance that appears to have arisen, from his having been advised by a physician, on account of his health, which had always been very delicate, to drink brandy and water. Meyer never went sober to his bed, which, from his conceiving that he could not lie on feathers, was an inclined board placed on four feet, and furnished with a support for the head; "upon this bed a very thin mattrass was spread, with a small pillow, and a very light coverlet."

On the 16th of January, Ignace Meyer, according to his custom, was carried intoxicated to his bed, at eight o'clock in the evening, by his nephew, a lad sixteen years of age. There had been no fire in his bed-room since the morning; and Meyer was put to bed, as was almost always the case, without being undressed. A table, with a bottle of water and a lamp on it, was placed close to the bed; but, at nine o'clock, when his nephew went, as usual, to look if Meyer was quiet, he found that the lamp was already out and the drunkard in a profound sleep. Next morning, however, about nine o'clock, an extraordinary smoke appeared to issue from the apartment; and when the brother and nephew of Ignace Meyer opened the door, a cloud of smoke burst forth so extremely fœtid as to knock them down; and prevent them from entering. This smoke was so thick, that they could not see the bed, which was still burning; and until ten or twelve buckets of water were thrown into the room, the melancholy catastrophe which had taken place was not perceived. The assistance of three other friends having

been requested, the room was entered. They found the face of Ignace Meyer reduced to a cinder, and covered with a crust resembling the hard shining soot which collects in the chimneys of stoves. The hair of the head was completely consumed, and the part of the pillow immediately under the head singed, while the wooden support was carbonized on one side. The carbonization of the head terminated where the neck was covered by the coverlet. The mouth was firmly closed, and could not be opened, owing to the contraction of the integuments from their being reduced to charcoal, and covered with a cake of soot. The right arm, which was under the coverlet and bent towards the head, was stiff but uninjured, except the hand, which was black and burnt, particularly the fingers: these were stiff and bent inwards. The remainder of the body, which was covered, was unhurt, except the great toe of the right foot, which, like the face, was reduced to a coal. The right foot was covered, but the great toe had passed through a hole in the coverlet. The limbs were drawn up towards the body, and so stiff that they could not be extended. The mattrass, the pillow, and the coverlet had scarcely suffered by the combustion, being only a little singed near the head; but they were covered over with a viscid, fat, fuliginous matter resembling pitch.

It is remarkable that the parts of the body not in immediate contact with the air, were untouched; while the other parts, viz. the head, face, right hand, and great toe of the right foot were reduced to charcoal. The clothes were not at all burnt. The fire had extended from the right side of the wooden support for the pillow, to the supports of the top of the bed, which were so much burnt, that the bed was inclined on the floor. The smoke was so thick and hot, that the heat was communicated to the floor of the room immediately above; and the odour so penetrating and empyreumatic, that it was smelt for a month after the accident.

Dr. Scherf endeavours to explain this combustion, and others of a similar nature, on electrical principles; but, as his explanation is purely hypothetical, we forbear to enter upon this part of the subject. It is however worthy of notice, that these phenomena have generally occurred in cold weather, and during winter; the night of the 16th and 17th of January was cold and dry, succeeding suddenly to a mild humid temperature*.

II.—*Dr. Kausch*, another German physician, has published

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* We had received a notice of this case from our German correspondent; but the particulars are extracted from the *Journal de Medecine, Decembre* 1814.

an account of some successful trials of baths of hot sand, especially when applied to the feet, in arthritic and rheumatic affections. In his directions for using these baths, the Doctor orders the limbs to be first rolled in five or six folds of linen cloth, and then placed in a deep vessel, which is to be filled with hot sand. The best time for using the bath is immediately before going to bed; the feet being allowed to remain immersed in the hot sand for three quarters of an hour, or even an hour. Dr. *Kausch* found this mode of applying heat to the extremities particularly beneficial in chronic rheumatism.

III.—We have received an account of a singular disease which prevails in Siberia, and annually destroys a very considerable number of horses; while many hundreds of people, also, are occasionally the subjects of its attacks. It is regarded as a species of *Anthrax*; but it has not been ascertained whether it depends on a peculiar state of the habit, or, which is a more probable supposition, is the consequence of the sting of some insect. The complaint in man first shews itself by a sensation resembling that produced by a sting, followed by indurations on the parts of the body exposed to the air; such as the face, breast, &c.; but in horses, the scrotum is almost always first affected. In 1812, one man only was attacked. The disease commenced above the left eye-brow, which in three days appeared gangrenous; and at the same time, the accompanying fever was extremely violent. A German physician, who attended the patient and relates the case, states, that having in previous instances derived no benefit from the use of camphor, valerian, and musk, he was induced to prescribe calomel in large doses; twenty-six grains were exhibited in the first twenty-four hours; after which, the dose was gradually diminished. Neither diarrhœa nor salivation ensued, but the health of the patient was rapidly restored.

IV.—Two cases of ruptured uterus are reported in the *New England Journal*, by *Dr. J. G. Coffin*. In the first, the woman was thirty-five years of age, and had had several children. The rupture took place without any apparent cause, and she died in about two hours afterwards. The subject of the second was a large and plethoric woman. The labour had been tedious, and the sufferings of the patient seemed beyond the usual degree, comparatively with the expulsive force of the pains. On the rupture taking place, she complained of much uneasiness of the abdomen; while uterine hæmorrhage and sickness supervened. The pain afterwards abated, and the head of the child receded beyond the reach of the finger. From this period the patient lived *sixty* hours.

Dr. Gorham gives the following account of the examination

of the body five hours after death. "When the integuments, which were more than two inches thick, were divided, the child came into view, its back presenting and lying among the intestines; which appeared to be cemented together by a thick coagulum of blood. Its head was firmly pressed under the right lobe of the liver, the left hand, embracing the left foot, rested in the right iliac region; its body passed diagonally across the abdomen, the right foot being pressed against the left ileum, and the right arm forming a line with the body. The child, which was a male, was putrid, and much swelled; the cuticle separating when it was handled. When it was removed, the umbilical chord was traced to the placenta, which was found in the cavity of the maternal abdomen, nearly at the posterior part of the uterus. The uterus itself was much contracted; its substance was very firm, and about two inches in thickness. On its posterior portion a longitudinal fissure was discovered, sufficiently large to admit three fingers; its cavity was small, but the fingers introduced, per vaginam, could be readily passed through the ruptured part into the abdomen. The intestines and peritoneum were highly inflamed, and there was a considerable quantity of very fœtid reddish-coloured liquid in the abdomen."

Dr. G. concludes the paper with the following remarks: "Supposing the fœtus, &c. to have been expelled from the uterus at the time of its division (rupture), or immediately after, as is probable, and that they had all been seasonably removed from the abdomen by gastratomy, is it not more probable that the patient would have survived the accident and operation, than that she should have lived sixty hours in the condition she did? It is probable, too, that the life of the child might have been preserved by a timely resort to the operation."

V.—The following liniment proposed by *M. Iadelot*, for the cure of scabies, is now used in France in preference to every other application;

℞ Saponis albæ, ℔j.
Olei Papaveris, ℔ij.
Potassæ Sulphureti, ℥iij.
Olei Thymi, f ℥i.
Misce—ut fiat unguentum.

An ounce of this liniment is directed to be rubbed on the affected parts every morning and evening, until the cure be completed: which, in the most inveterate cases seldom requires more than twelve days.

CHEMISTRY.

VI.—The melancholy fate of M. Scharinger, a chemist of Vienna, who died lately from the application of prussic acid to the naked arm, gives more than ordinary interest to the fol-

lowing paper. It is intitled, "*Recherches sur l'Acide Prussique*," par *M. Robert*, Pharmacien, Membre de l'Academie de Rouen:

"Prussic acid is that peculiar matter, which, in combination with oxide of iron, constitutes the substance commonly called Prussian blue, Berlin blue, and in modern chemical language, prussiate of iron. It is characterized by an odour similar to that of bitter almonds; and thence it is conjectured, that substances possessing this odour contain prussic acid. Thus it is found in the leaves of the cherry laurel *(prunus lauro cerassus)*, bitter almonds *(amygdalus communis)*, the kernels of black cherries *(prunus avium)*, and the kernels, the leaves, and the flowers of the peach *(amygdales persica)*; and the effect these produce on the animal œconomy is attributed to the prussic acid they contain. In these substances however it is combined with a volatile, very odorous, bitter oil, which may diminish or augment its energy*.

"In a memoir upon prussic acid read to the Academy of Sciences, the 15th of December 1787, Berthollet thus expresses himself: 'If oxymuriatic acid be mixed with prussic acid, prepared after the method of Scheele, the former returns to the state of muriatic acid, while the latter acquires a much more powerful odour; if it be still more impregnated with the oxymuriatic acid, and then exposed to the action of light, its odour is entirely changed to that of an aromatic oil; and it separates from the water in the form of a heavy oil, which falls to the bottom of the vessel. After some time, this oil assumes the form of little crystals.' May not this singular transmutation, which Berthollet could not explain, have some connection with the following fact?

"I charged the cucurbit of an alembic with a considerable quantity of leaves of the cherry laurel *(prunus lauro cerassus)*; and, having added a sufficient quantity of water, proceeded to distil, placing in the neck of the alembic the Florentine receiver, to collect more easily any volatile oil which the leaves might give out. The product of the distillation, which smelt very agreeably of kernels, was milky at first, but soon let fall a considerable quantity of an oil slightly coloured, and having also a very agreeable odour. On finishing the distillation, the Florentine receiver was set aside, after closing accurately both the openings. At the end of some months, small, very white, silvery crystals, which I at first erroneously supposed were

* Prussic acid, according to Berthollet, is a compound of azote, hydrogen, and carbon; and Clouet proved that it may be obtained by passing ammonia through a porcelain tube containing red hot coals. —Editors.

benzoic acid, were perceptible on the surface of the liquid, and soon became so numerous, that I collected a considerable quantity of them.

" This fact led me to imagine that by a natural operation, undoubtedly difficult to explain, prussic acid could be converted into an aromatic oil, of a much more agreeable flavour than itself. In order to solve this problem, which appeared to me of importance, I prepared some prussic acid according to Scheele's method; but I shall describe the exact process, as some of the results differed from those described by the Swedish chemist.

" I took twenty ounces of prussian blue, and rubbed them accurately together with ten ounces of red oxide of mercury; and having added, by degrees, two pints of distilled water, I exposed the mixture in a stone dish to the heat of boiling water for an hour, constantly stirring it with a glass spatula. I then filtered it, pouring a pint of boiling distilled water upon what remained on the filter*. The fluids being mixed together, and evaporated to a pint, the whole was put into a tubulated glass retort, to which a glass matrass, capable of containing two litres, was adapted. Two tubes were introduced through the the tubulature of the matrass; one of which, straight and open at both ends, was plunged into a layer of water weighing two ounces, which had been previously introduced into the matrass; the other, doubly curved, was at one end placed a few lines only within the matrass, the other extremity being plunged into a flask filled with alcohol of 35 degrees. By this arrangement the matrass answered the purpose of a receiver for the fluid product of the distillation, whilst the alcohol received the gases only, the vertical tube performing the office of a tube of safety.

" The apparatus being well luted, I introduced into the retort three ounces of levigated iron filings *(limaille de fer porphyrisée)*, and two ounces and a half of concentrated sulphuric acid. The mixture being stirred with a glass rod, and the tubulature closed, the distillation was begun with the gentle heat of a sand bath. As soon as the impression of the fire was felt, bubbles of gas began to pass through the alcohol, and continued to be disengaged for six hours; the alcohol became slightly coloured, and a fourth of the fluid in the retort passed over into the receiver. Having withdrawn the flask containing the alcohol, the apparatus was left in this state until next day. It is necessary to observe that the liquid in the matrass, and the gas which it contained, communicated with the atmospheric air by means of the curved tube.

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* The fluids, in cooling, let fall prismatic crystals of prussiate of mercury, similar to those described by Fourcroy.

" In a memoir, read to the Institution on the 4th of Feb. 1811, M. Gay-Lussac proved that prussic acid dilated considerably the air or gases with which it is mixed, communicating to them its properties, and that it then resembles a permanently elastic fluid. Having, by the arrangement of my apparatus obtained prussic acid dissolved in alcohol, in water, and in the state of gas mixed with the air of the apparatus, I shall examine separately each of these three products.

" § 1. *Of the Prussic Acid dissolved in the Air of the Apparatus.*

" The apparatus, after the flask containing the alcohol was removed, remained twenty-four hours in communication with the external air. On removing the luting from the matrass to separate the liquid product of the distillation, I was struck with the very disagreeable odour which it gave out; and my pupil, who, after pouring the liquid into a flask, having had the curiosity to apply his nose to one of the openings of the matrass, was almost suffocated by the very acrid irritating vapour, which stunk abominably, and in less than a second felt as if stupefied and ready to fall down, with an oppressive spasm of the throat, and a spitting which lasted many minutes.

" This singular circumstance determined me to try the effect of this mixed vapour upon some animals. I closed with two corks both openings of the matrass, reserving till next day the experiments I wished to make.

" Regarding the odour of prussic acid, Scheele thus expresses himself in his treatise *de Materiâ tingente cærulei berolinensis:* " *materiæ tingentis odor singularis neque injucundus est.*" That which issued from the matrass was extremely disagreeable, resembling very concentrated sulphuretted hydrogen; but I could not accurately determine this point, from the lassitude which respiring even the smallest portion of it produced, and the disagreeable spitting and momentary stupefaction that followed. The following experiment justifies my caution in not too freely respiring it.

" 1*st Experiment.* The bill of a bird being applied to the orifice of the matrass; the animal died in an instant.

" 2*d Experiment.* The mouth of a young rabbit, twenty-five days old, being applied to the orifice of the same matrass, which was corked after each experiment, the little animal died in less than a second, with the mouth open and discharging a great quantity of saliva.

" 3*d Experiment.* A cat, six months old, being applied in a similar manner to the orifice of the same matrass, made some efforts to withdraw itself; but in two seconds it died with the same symptoms as in the second experiment.

" 4*th Experiment.* An old, but healthy spaniel, was applied to

the orifice of the matrass, so that the nostrils only were exposed to the vapour: it made several efforts to escape from its painful situation; but in six minutes fell down, and died in the manner already ascribed.

"*5th Experiment.* A much stronger dog, which had not eaten for twelve hours, being submitted to the same experiment, died in a similar manner in less than six seconds.

"From these five experiments, we may conclude that a matrass, of the capacity of two litres, full of prussic acid gas mixed with atmospheric air, is sufficient to demonstrate the deleterious nature of that gas, and that its injurious quality is not sensibly modified by admixture with atmospherical air.

"§ 2.—*Of Liquid Prussic Acid.*

"I have said that about a fourth of the liquid contained in the retort passed over into the receiver during the distillation. I may remark, as Scheele and other chemists have done, that the liquid was of a slight blue tint, and that after some hours it let fall a certain quantity of prussiate of iron.

"It is impossible to inspire, or rather to approach, the nose to a flask containing this liquid, without experiencing the stupefaction and spitting I have already described; and it might even be very imprudent to leave it open in a small close apartment; as accidents would undoubtedly accrue from respiring for a length of time the air of such apartments*.

"This liquid has a decidedly bitter taste, similar to that of bitter almonds.

"*6th Experiment.* A rabbit, five days old, being forced to swallow a grain of this liquid, the little animal uttered a cry, and died in a second.

"*7th Experiment.* A coffee-spoonful of it was given to a very strong dog; the animal uttered a very strong cry, and instantly died.

"These two experiments prove the deleterious nature of the liquid acid; but, comparing the promptness of the effect, the gaseous acid, even when mixed with air, appears to act more powerfully than the liquid acid.

"§ 3.—*Of Prussic Acid dissolved in Alcohol.*

"Before relating my experiments, I ought to state a fact which was communicated to me by M. Vogel, on the 27th of October last:

"* At the moment of writing this note, the 29th of September 1814, the tube which communicated between the matrass and the flask of alcohol, is still sensibly impregnated with the odour of the prussic acid."

" 'I have learnt from Germany,' said he to me, 'that a professor of chemistry, wishing to examine the effect of prussic acid upon the animal œconomy, introduced some prussiate of potass into a retort, to which a matrass containing alcohol was adapted. Having fitted the apparatus, he poured, through the tubulature, some sulphuric acid into the retort, and thus saturated the alcohol with prussic acid. This spiritous liquor has some analogy to laurel water, kirchenwasser. The chemist, shewed this liquid to some friends who were dining with him; and on leaving the table, forgot to carry it away. The servant, in clearing the table, finding this liquor agreeable to his palate, drank a small glassful of it; and died in two minutes, as if struck down by apoplexy. It was this extraordinary fact which led me to endeavour to obtain alcohol saturated with prussic acid. The demilitre of alcohol at 35 degrees, through which prussic acid gas had passed for six hours, had not contracted any very sensible odour after the operation. It was slightly coloured; but, as far as odour and taste was concerned, did not appear sensibly changed.'

" *8th Experiment.* A young rabbit having been forced to swallow a coffee-spoonful of this alcohol, it exhibited symptoms resembling those of intoxication. It remained for some minutes without motion; but soon recovered all its vigour, as if nothing had happened. Concluding that the alcohol was not sufficiently saturated with the prussic acid, I repeated the process already described, receiving for several hours the prussic acid gas in the same alcohol. The process being finished, the alcohol emitted the same odour, only less intense, as the matrass and the liquid. It had not the taste of laurel water. It was employed in the following experiments:

" *9th Experiment.* A strong wolf dog, who had fasted for twelve hours, having swallowed two drachms of this alcohol, was thrown, in two seconds, into strong convulsions, with *emprosthotonos*, and died in five minutes.

" This last experiment demonstrated the deleterious nature of prussiated alcohol; but it acts less energetically than the gas or even the liquid acid.

" As it was important to endeavour to ascertain, by dissection, the effects of this terrible agent upon the animal œconomy, I engaged M. Cisseville, house surgeon to the Hospital *d'Humanité*, to open the bodies. The following are his observations:

"1st Case. *Dissection of the Subject of the Fifth Experiment.* —This was a very strong dog, forced in a fasting state to breathe the mixed gas contained in the matrass.

" *Head.*—The brain was perfectly healthy and untouched, except that it exhaled the odour of prussic acid. The sinus of the dura mater contained very little blood; but that was appa-

rently changed both in colour and odour. The tongue was soft, blueish, and hung out of the mouth.

" *Neck.*—The orifice of the glottis did not appear to have suffered any sensible change. The ventricles of the larynx exhibited some bloody mucus. The mucous membrane of the trachea was marked with reddish streaks, and its capillary system injected.

" *Chest.*—The lungs were of a bright red hue; but the blood which escaped by the divided vessels, was not so red and frothy as arterial blood; which might be owing to venous blood contained in the divisions of the pulmonary artery escaping at the same time. The aortic cavities of the heart, and also those of the pulmonary veins, were filled with very dirty deep red blood, resembling lees of wine in colour and consistence. The aorta and its principal divisions contained blood of a similar description.

" The reservoirs of venous blood contained thick and very dark-coloured blood, resembling a liquid in which portions of liver had been dissolved. The lungs, heart, and the blood they contained, exhaled the odour of prussic acid.

" *The Abdomen.*—The digestive organs were healthy; the blood of the vena porta presented nothing remarkable; the liver had the odour of the acid, but in a less degree than the brain.

" The muscles were in their usual state; but the odour of the acid was also evident in them.

" 2nd Case. *Dissection of the Subject of the Seventh Experiment.*—This was a strong dog, who had swallowed, fasting, a coffee-spoonful of the fluid acid.

" The brain was apparently unaltered; but it exhaled the odour of prussic acid. The tongue, as in the preceding case, was blueish and hanging out of the mouth; and the velum palati black upon its receding part. Around the posterior opening of the nasal fossi and the upper part of the pharynx, were evident traces of inflammation. The mucous membrane of the œsophagus was not altered either in colour or texture; but the mucus which lubricated it, was strongly impregnated with the odour of the acid. The stomach was contracted, the furrows and rugæ of the mucous membrane being strongly marked.

" The blood of the lungs and heart was in the same state as in the first case, except that the colour was not so deep.

" 3rd Case. *Dissection of the Subject of the Ninth Experiment.*—This was a strong wolf dog, who had swallowed two drachms of prussiated alcohol.

" *The Head.*—The brain appeared uninjured; but exhaled a mixed odour of alcohol and prussic acid. The tongue was in the same state as in the other cases; the velum palati

blackish; its posterior part, and the upper part of the pharynx, very red, and as if strongly injected.

"*Neck.*—The larynx healthy; the trachea, as well as the œsophagus, which contained a yellowish matter, a little spongy, strongly impregnated with the odour of prussiated alcohol.

"*Chest.*—Nearly as in the preceding cases, except that the lungs and the blood were less red; their colour being a slate-grey *(gris-ardoise)*. They appeared also less gorged with blood; the cavities of the heart were full.

"*Abdomen.*—The stomach was very red, and its internal surface shewed evident traces of inflammation: the intestines presented nothing particular*.

VII.—In a letter from *Van-Mons* to *M. Delamétherie*, published in the *Journal de Physique, (Mars, an* 1814, p. 225,) the following method of producing artificial cold is related:

"*Brugnatelli*, by mixtures of alcohol and æther, or Hoffman's anodyne with snow, has produced as intense degrees of cold as can be obtained by crystallized potass, or solid muriate of lime mixed with snow. This method is considerably more easy than that with the salts; and by afterwards submitting the residue to distillation, scarcely any of the ingredients is lost. The proportions are two parts of snow and one of alcohol. "It appears to me," says Van-Mons, "that the æthers combine with the snow, forming a homogeneous fluid; but the elevation of the temperature again separates the alcohol, successively weakened, until that which no longer excites heat with water, being agitated with the three fourths of its weight of snow, produces a more intense cold than pure alcohol. The excitement of cold is the effect of a body saturated with the water of hydration, and of salification, yielding up these two causes abridged of their caloric, to the water of solution, which, before it can retake them, must be surcharged with caloric, and which, in default of this surcharge, raises the caloric to its own temperature, and that of the surrounding bodies. The excitement of heat is produced by a body which passes to the state of a hydrate, or a salt, whether out of water, or an acid, or an oxide; it is the effect of the hydrogen of the passive body in these operations, that supplies itself with caloric from the oxygen of the active body, which is always the most oxidized. Water in this respect is active, opposed to acids and all other bodies; and acids are active, opposed to oxides. Bodies which displace caloric are electro-negatives, or the most hydrogenated, and are provided with the least caloric. Those which deposit caloric are electro-positives, or the most oxygenated, and at the same time contain the most caloric."

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* *Annales de Chimie, Octobre* 1814, p. 52—69.

BOTANY.

VIII.—*Continuation of Koelreuter's Dissertation on the Form of the Anther Powder of Plants, (from* REPOSITORY, *vol. iii. p.* 158.*)*

Ovate, irregular.

Moræa *irioides* L. Mant
Cornus *sanguinea*
Itea *virginica*
Gentiana *Amarella*
Hæmanthus *puniceus*
Tulipa *Gesner*
Asphodelus *fistulos*
Lamium *album*
——— *purpur*
——— *amplexicaule*
Rhinanthus *Crista galli*
Pedicularis *palustris*
Sparganium *erectum*
Momordica *Charantia*
Cucurbita *Citrullus*

Oblong, more obtuse at the extremities.

Hippuris *vulgaris*
Jasminum *grandiflor*
Veronica *Anagall aquatic*
Galium *verum*
Sanguisorba *officinar*
Ptelea *trifoliata*
Heliotropium *peravianum*
Lysimachia *vulgaris*
——— *Ephemer*
——— *quadrifol*
——— *ciliata*
——— *Nummularia*
——— *arabica*
Anagallis *Monelli*
Capsicum *annuum*
Bupleurum *ranunculoides*
Viburnum *Tinus*
——— *nudum*
Cassine *Maurocenia*
Polianthes *tuberosa*
Peplis *Portula*
Polygonum *aviculare*
——— *Convolvulus*
Ruta *graveolens*
Saxifraga *tridactylit*
Cotyledon *Telephium*
——— *serrata*
Lythrum *Salicaria*
Reseda *Luteola*
Euphorbia *platyphylla*
Sempervivum *arboreum*
——— *arachnoid*
Punica *Granatum*
Amygdalus *persica*
——— *nana*
Prunus *virginiana*
Mesembryanth *crystallin*
Rubus *cæsius*
— *fruticos*
Tormentilla *erecta*
Geum *urbanum*
Comarum *palustre*
Thea *bohea*
Cistus *apenninus*
Corchorus *siliquosus*
——— *trilocular*
Delphinium *Consolida*
——— *Ajacis*
——— *elatum*
Nigella *damascena*
—— *sativa*
—— *orientalis*
Liriodendron *Tulipifera*
Anemone *vernalis*
Helleborus *viridis*
——— *fœtidus*
Stachys *sylvatica*
Euphrasia *officinalis*
Antirrhinum *Linaria*
Lantana *africana*
Vitex *Agnus castus*
Spartium *scoparium*
Robinia *Caragana*
Colutea *herbacea*
Æschynomene *americ*
Astragalus *canadensis*
Citrus *medica*
— *Aurantium*
Lobelia *Cardinalis*
—— *siphilitica*
—— *inflata*
—— *cliffortia*
Quercus *Robur*
Fagus *Castanea*
— *sylvatica*
Ceratonia *Siliqua*

(To be continued.)

PART V.

MEDICAL AND PHYSICAL INTELLIGENCE.

I.—SOCIETIES AND LECTURES.

Royal College of Surgeons, London.

Hunterian Oration.—Tuesday, Feb. 14th, ult. being the anniversary of the late John Hunter's birth-day, The Oration was delivered, at the Theatre of the College, by Sir William Blizard, the Master.

It presented little of novelty. The Orator expatiated at length on the necessity and the advantages of studying Anatomy and Physiology, and attending hospitals, particularly those of London, for the formation of a good surgeon. Provincial hospitals might be of service in the education of youth; but proper opportunities and the true incitements to study could be obtained only in those of the metropolis.

Sir William spoke with respect of Oxford, Cambridge, and Dublin: admitted the high character of Edinburgh as a school of Medicine; but observed, that great numbers of students came from that seminary to London, to perfect themselves in the principles and practice of Surgery. He then entered into a detail of the purposes for which the London Corporation of Surgeons was originally instituted, and the eminence its members had attained; and touched on the munificence which had founded prizes for eminent talents.

The Orator traced the dawn of improvement in the Art and Science of Surgery, from Serjeant Wiseman to John Hunter: mentioning the intermediate names as they successively arose to consideration; panygerizing the talents, and enumerating the works of each; and concluded with a high eulogy on the character and doctrines of Mr. Hunter, and an elaborate account of his writings. The Hunterian discoveries in physiology, he pronounced to be of the highest importance; and defended with zeal the metaphysical opinions of Mr. Hunter on the vitality of the blood!

In the course of the Oration Sir William, in alluding to the various intentions and views of the College for the improvement of Surgery, stated a design, at some future period, of sending Members to travel for the acquirement of knowledge, and observing the practice of other countries:—a design truly worthy the character of an enlightened and publick-spirited scientific body. He also slightly noticed the services rendered to Surgery by the labours of the Royal Academy of Paris:—a circumstance which forcibly impressed us with sentiments of regret, that the Orators, both last year and on the present occasion, had omitted to enrich their orations by noticing the contemporaneous efforts in France, Italy, and many other parts of the civilized world, which have contributed to advance the art of Surgery, and exalt it to the rank of a Science.

LECTURE IV.—*On Animal Substances.* By Professor BRANDE, at Apothecaries' Hall, London.

THE observations which I made respecting the two methods of analysis applicable to Vegetable Substances, apply also to animal products. The one, and that which formerly was universally practised, yields the ultimate component parts—the other affords the proximate elements.

If an animal substance, such for instance as a piece of muscular flesh, be distilled in a proper apparatus, by a heat gradually raised to redness, it is resolved into a variety of substances, some of which are educts, but most products of the operation. These are more compound and numerous than the usual products of vegetables, and indicative of the more complex nature of animal matter. The principal substances thus obtained, are, water gradually become opaque and fetid—an oily matter—carbonate of ammonia, and gaseous matter.

The water is partly an educt, but partly also produced from the union of its elements evolved in their nascent state. It is tainted by empyreumatic oil, and rendered alcaline by carbonate of ammonia—other ammoniacal salts may also be detected in it, such as muriate, prussiate, acetate, and benzoate, &c. &c. The solid carbonate of ammonia, which sublimes, is also empyreumatically tainted; whence its brown tinge and disagreeable odour. The empyreumatic oil, when first obtained, is thick, opaque, and of a dark colour; but by re-distillation it may be rendered nearly colourless. Its fetor is considerable.

The alcaline liquor, the volatile salt, and the empyreumatic oil, evolved in these processes, are similar to those which have long been used in medicine under the names of spirit of hartshorn, volatile salt of hartshorn, and Dippel's animal oil. They may be prepared indiscriminately from horn, bone, cartilage, and various other animal substances.

The gaseous products, as may be supposed from the nature of animal matter, are of a very complex character; they consist chiefly of carbonic acid and hydrogen, holding in solution variable quantities of charcoal, sulphur, and phosphorus. The coal which remains is possessed of more brilliancy, and is heavier than vegetable charcoal—it is extremely difficult of incineration, owing to the salts which it contains, and which form upon it a glaze that protects it from the action of the air.

It is by experiments conducted in this way, that we are made acquainted with the ultimate of elements of animal matter, which we find more numerous than those of vegetable. They are carbon, hydrogen, nitrogen, oxygen, chlorine, phosphorus, sulphur, potash, soda, lime, magnesia, and iron.

It is to the nature and proportions of these elements, that the peculiar products of the decomposition of animal substances are to be referred. Thus the large production of ammonia depends upon the presence of nitrogen and hydrogen, which are the elements of that volatile alcali, and the fetor which arises during these changes, depends upon the evolution of phosphuretted, sulphu-

retted, and carburetted gaseous products, mixed with empyreumatic matter.

When animal matter is burned in contact with fixed alcali, there results a peculiar compound, which has the property of precipitating solutions containing the red oxide of iron, of a blue colour.

This compound, generally known under the name of prussian blue, was accidentally discovered by a colour-maker at Berlin.

These characters, the evolution of ammonia, and production of prussic acid, are very characteristic of animal matter, but by no means belong to it exclusively; for, as I stated in my last discourse, certain vegetables contain nitrogen, and therefore yield ammonia; and others produce prussic acid, or even contain it ready formed.

The principle which gives flavour to bitter almonds, peach leaves, &c. has generally been considered analogous to prussic acid. It may be procured from those vegetables by distillation, and appears as a pungent oil, extremely poisonous. The prussic acid, separated from prussian blue, or from its other compounds, is also a volatile poisonous fluid, and has the odour of bitter almonds.

The phenomena of animal putrefaction are extremely peculiar, and differ considerably from those of vegetables. This is a very important subject of inquiry to the medical chemist; it is connected with the production of infectious matter, with the prevention of its effects, and with several other physiological and practical subjects, upon which chemistry has thrown much light.

I have already hinted at the composition of atmospheric air, and stated it to consist of about $\frac{1}{5}$ of a highly respirable, aeriform fluid, supporting animal and vegetable life and combustion, and of $\frac{4}{5}$ of nitrogen or azote, which extinguishes flame, and which is fatal to animals. The due mixture of these fluids furnishes the only compound which will answer for the purpose of animal respiration, and for the healthy continuance of vegetable functions: for although plants will live in other airs longer than animals, they ultimately sicken and die. The oxygen of our atmosphere, thus proved to be the great support of life, is also the rapid promoter of putrefaction, as is easily shewn by immersing a piece of flesh in oxygen, and another in nitrogen. In the former, at 60, putrefaction begins in twenty-four hours, and is very rapid in its progress—in the latter, under the same circumstances, marks of change occur in about a week, and the progress is slow and imperfect. As, therefore, without the due admixture of nitrogen in our air, to dilute the oxygen, we should be hurried in respiration, and thrown into inflammatory fever, as combustion would go on with such rapidity as soon to consume every thing upon the face of the earth; so would putrefaction so speedily ensue, as to produce all the evil effect of infectious matter, before it would be in our power to prevent them.

There are other gases which almost prevent putrefaction altogether, such as carbonic acid (six weeks) and nitrous gas (one year).

A piece of flesh immersed in water also suffers putrefaction, but its phenomena are dissimilar to those in air. Ammonia is slowly evolved, and the muscle passes into the state of adipocere, a substance somewhat resembling a mixture of fat and wax in its properties.

The mineral acids decompose animal products with various phenomena. The results of the decomposition are generally very complex: the action of sulphuric acid is attended with the evolution of charcoal, and of nitric acid, with the production of oxalic acid, when muscular flesh is used.

The caustic fixed alcalies corrode and dissolve animal bodies; they form a soap with albumen; and, when applied to living parts, kill them, and then enter into chemical union; their action is commonly attended by the evolution of ammonia.

Saline substances, vegetable oils, sugar, empyreumatic oil, and spices, are more or less active in preserving muscular flesh from putrefaction; and it is upon such power that the art of embalming depends.

But it is necessary to take a more particular view of the phenomena of putrefaction, as they occur under common circumstances; and in the first place we cannot but stop to ask what is the cause or nature of the remarkable change of qualities which take place upon the death of an animal. Before this mysterious change, what we call the ordinary chemical propensities or habitudes of matter were prevented or opposed; now, every part of the body suffers rapid change, and quickly passes through a series of decompositions, until every trace of organization is lost.

The antient philosophers formed various hypotheses, accounting for the phenomena; nor have the moderns been backward in exercising their ingenuity upon this mysterious topic: but they have furnished little else than plausible probabilities; and the theories of life are merely "collections of bad arguments," in defence of untenable physiological speculations—they are suppositions which suppose nothing; and only so far deserve the notice of students, as shewing them into what frivolous subtilties great men have been led.

Transition from life to death is generally not *instantaneous*, though in warm-blooded animals nearly so. In some of the amphybia the muscles are irritable many hours after apparent death, and are thrown into violent action by the stimulus of electricity. When an animal is killed by electricity, or dies in any other very sudden manner, this susceptibility is not observed.

When a part of the body only dies, or when *mortification* ensues, its effects and phenomena will depend upon the part affected: the putrefaction in these cases is remarkably rapid, owing to the temperature of the surrounding parts. The application of embrocations, &c., operates by embalming the dead part as it were; rendering it less disagreeable until it is separated by a natural process, or a surgical operation. But these remedies can of course produce no restoration of the mortified structure.

The usual changes of putrefaction are, that the flesh becomes soft and flabby, and gradually acquires a brown and greenish hue. The smell, which at first is excessively disagreeable, afterwards mends a little, and an ammoniacal odour predominates. At length a gelatinous mass is formed, which afterwards dries into an unctuous residuum. The products of putrefaction are subject to much variation. Carbonic acid, water, ammonia, and fetid inflammable and

uninflammable gases, are invariably extricated, and the surrounding atmosphere becomes strongly tainted. In many cases nitric acid is a result. For the completion of these changes, a considerable period of time is required, even where there is free access of air; but where air is tolerably excluded, they are remarkably tardy in their progress. The influence of putrid effluviæ in generating what are called putrid disorders, is a curious subject of inquiry. It has been supposed that the evil effects of the tainted air arise from the diminution of its oxygen: but chemical analysis shows no such deficiency; so that they must depend upon a positive energy of the putrid matter held in the air. The highly fetid effluviæ of dead carcases is less active in generating putrid disorders, than the less odious exhalations of a person suffering under such diseases; whence Haller, Berzelius, and others have concluded, that, the less the infectious matter differs from living matter, the more active it is in giving living bodies a tendency to produce it.

Mr. B. concluded his discourse with some remarks upon the effect of acid fumigations, which, by chemically acting upon the noxious matter dissolved in air, resolve it into inert and harmless forms of matter. The acids selected for this purpose are such as easily acquire and retain a gaseous state. The muriatic acid, which is easily generated by pouring oil of vitriol upon common salt, was first recommended by Dr. Johnstone of Worcester, in the year 1758. In 1773, Guyton Morveau used it with great success in destroying infectious matter. The vapour of nitrous acid also answers well, and is perhaps rather less disagreeable than muriatic acid. It is extricated by pouring oil of vitriol upon nitre, and placing the mixture in saucers upon hot sand. In uninhabited apartments, chlorine may be used with the utmost efficacy. It is procured by pouring oil of vitriol upon a mixture of common salt and black oxyde of manganese; or the oxide may be used alone, with muriatic acid. Vinegar, so frequently had recourse to in hospitals and private houses, is inefficacious as *destroying* infection, and only of service in covering a bad smell. In all cases thorough ventilation should be attended to, a circumstance unpardonably neglected in many of the hospitals, and in most of the prisons of this metropolis.

Apothecaries' Hall, Feb. 20, 1815.— The Society of Apothecaries having completed several new arrangements and improvements in their laboratories, in which steam is employed for the purposes of evaporation, distillation, &c.; such professional gentlemen as are desirous of viewing them, are informed, that they will be open for their inspection on the second Tuesdays in March, April, May, and June, between the hours of two and three o'clock.

*** It affords the Editors much satisfaction to announce, that they will publish in the *Repository*, either in the next Number or that following it, a complete set of drawings, and a description of this extensive and ingenious apparatus; which is so admirably calculated to conduct various pharmaceutical operations with a precision, facility, and œconomy, hitherto unexampled. It is an arrangement that must be found of peculiar utility in all laboratories on a large scale.

Royal Society.—On Thursday, the 12th of January, the remainder of Mr. Travers's paper on the way in which the eye accommodates itself to the sight of objects at different distances, was read. He considers the iris as muscular, and as connected with a kind of inner iris, or ring, which by its contraction increases the convexity of the lens. The eye he conceives is only acted upon by the stimulus of light. Hence he believes that the contraction of the iris is regulated entirely by the retina. The eye, in his opinion, is fitted naturally for viewing distant objects. When near objects are viewed, the iris contracts, in consequence of which the inner ring acts upon the lens, and increases its convexity. The sensation of fatigue he supposes owing to the over-action of the external muscles of the eye, and not to any fatigue in the iris itself.

Signor Zamboni presented to the Society an instrument of his own construction. The principle on which it acts has been known in this country several years. It merely consists of two electrical columns or galvanic piles, composed of disks of paper silvered on one side, and covered with powdered oxide of manganese, on the other, placed perpendicularly at the distance of about six inches, and each coated with sulphur, and covered with a glass tube surmounted with a brass ball; between these pillars a steel needle is placed to move on an axis; the longer arm of this needle touches the upper end or ball of each pile, and receives from it a sufficient repellent force to drive it to the adjacent ball, and *vice versâ*: in this manner the motion is continued. No apparatus to measure time has yet been connected with this simple motion, which is protected from the atmosphere by a glass frame.

Linnæan Society.—On Tuesday, the 17th of January, a paper by the Rev. Patrick Keith, on the epidermis of plants, was read. He gave an historical account of the different opinions entertained by vegetable physiologists respecting the epidermis. He himself considers it as composed of fibres rather than cells, an opinion adopted by some other persons. He gave an account of the epidermis of saffron, in which he found a peculiar structure. He observed pores likewise on the veins of leaves, where hitherto it has been supposed that they do not exist.

II.—PRIZE QUESTIONS.

The Class of Physical and Mathematical Sciences of the Royal Institution of France, has proposed the following as the subject of an Essay, for a prize gold medal of 3,000 francs' value. "To determine, 1st, The progressive elevation of the mercury in the thermometer, at least from zero to 200° of the centigrade scale. 2dly, The law of refrigeration in vacuo. 3dly, The laws of refrigeration in air, hydrogen gas, and carbonic acid gas, at different degrees of temperature, and under different states of condensation." The essays must be delivered to the Secretary of the Institution before the 1st of October, 1816; and the result will be published on the first Monday of January, 1817.

The same Class of the Institution also proposes the following subject, for a gold medal of the same value, to be adjudged at the same time: "To ascertain the chemical changes which fruits undergo during their ripening, and after that is completed. In

solving this question, the influence of the atmosphere which surrounds fruits must be examined, and the changes it undergoes.

"The observations may be confined to fruits of different species, provided inferences can be drawn from them, sufficiently general."

III.—MEDICAL.

Amenorrhœa and Typhus.—In the meteorologico-medical observations for Paris for the first six months of 1814, by Drs. Bayle, Chamberet, Chomel, Fizeau, and Villeneuve, two facts are particularly remarked:—1. that a great number of females in Paris were much deranged in their menstrual discharges in the month of April, which was ascribed to the fear excited by the approach of the allied troops, and particularly by the cannonade, on the 30th of March, under the walls of Paris:—2. that typhus, which appeared in Paris in the last days of February in the hospitals, then over crowded with sick and wounded soldiers, produced an excessive mortality in March in these establishments. In the civil hospitals only, there were 45,000 of these military patients. At length it spread into the city, among the different classes of inhabitants, upon whom it had great effect during April, but sensibly diminished in May, and ceased to shew itself almost entirely in June.

Since the sheet containing Dr. Watt's letter went to press, we have read a review of the state of medicine (*See Journal de Medécine, Janvier* 1815) by *MM. Chamberet* and *Villeneuve*, wherein Dr. Watt's opinion, that the increase of mortality from Measles, at Glasgow, arose from the introduction of Vaccination, and the consequent diminution of Small-Pox, is briefly noticed. Upon this it is observed: "But this hypothesis is formally contradicted (*démentie*) by facts. Thus at Boston, in America, there is one case of measles only in the registers of mortality in 1812 and 1813; and in the mean time vaccination had been so generally practised there, that in 1812 there was one person only that died of small-pox, and none in 1813."

IV.—SURGICAL.

We have received from Mr. Hennen, Surgeon to the Forces, a small piece of the jacket of a soldier, with the lining attached to it, which was carried into the bladder of the wearer, by a ball with which he was wounded in one of the battles on the Peninsula. The ball having passed out of the body, and both the external wounds and those of the bladder being healed, the soldier was again doing his duty; when, having drank a very considerable quantity of new wine, he experienced a stoppage of the flow of the urine, with great pain in the urethra; the cause of which, on dilating the passage, was discovered to be the above morsel of his jacket, which was now expelled with the urine. Although it had remained several weeks in the bladder, yet it was perfectly free from incrustation.

M. Blaise, Member of the former College of Medicine of Nancy, has proposed the employment of mucilage of gum tragacanth in burns. The following is the mode of employing it: linen rags, or bibulous paper soaked in this mucilage, are to be laid over the affected parts, and left on for three days, keeping them moist with the same mucilage. The dressings are then to be cautiously removed by the aid of tepid water; and new ones of the same kind applied; remo-

ving them every third day until the cure be complete. "This treatment," adds *M. Blaise,* "prevents any mark of the cicatrix from being left; it effects the cure in a very short time, and has the advantage of almost instantly allaying the pain." — *Gazette de Santé.*

V.—CHEMICAL.

Charcoal.—Professors *Dobereiner* and *Kiesser,* of Jena, have ascertained, by experiment, that well burnt charcoal, in a moistened state, possesses the property of freeing the surrounding atmosphere of noxious smells; and thence proposes it as the means of purifying the air.

Phosphuret of Ammonia.—*M. Vogel* has lately made a curious experiment in Paris. He put a piece of phosphorus into ammoniacal gas, and then exposed the phosphorus to the solar rays. A black matter was formed, which was conceived to be a combination of phosphorus and ammonia.

VI.—MEDICO-BOTANICAL.

Eupatorium Perfoliatum.—From experiments instituted by Dr. A. Anderson of New York, to ascertain the medicinal properties of this plant, it appears that many of them are similar to those of the cinchona officinalis, the anthemis nobilis, and other similar articles; but that these virtues reside more particularly in the leaves. The pharmaceutical preparations of it, are a decoction of the leaves and flowers, an infusion of the same parts, the leaves pulverized, and a tincture of the leaves and flowers with proof spirits.

Dr. A. considers it an efficacious remedy in most febrile disorders, especially in intermitting and remitting fevers, yellow fever, in many cutaneous complaints, and in diseases of great debility.

This plant is indigenous in North America, and has long been esteemed by the Indians for its medicinal virtues.

VII.—NATURAL HISTORY.

Extraordinary Phenomenon. — A letter from the Rev. Thomas Plaskett, Harlaxton-Lodge, Grantham, Lincolnshire, has been published in the *Farmers' Journal,* of which the following is an extract: — "On the 19th instant, (January 1815,) a valuable in-foal mare of the cart kind, nearly ten months advanced in pregnancy, was taken suddenly ill, and after every effort, in vain, to give relief, died in the course of sixteen hours. According to my general rule, on the removal of the body, I gave strict orders to the collar-maker not to open it, unless under my immediate inspection, which was complied with; and, upon examination, the foal was in a proper position, in the womb, and in a perfect state; and, on further examination, were found, in a distinct separate sheet or covering, three perfect calves, viz. one male and two female, supposed to be three months old, which, by a reference to dates, corresponds with the time when the two different species might have come in contact with each other."

In a postscript Mr. P. states that he has preserved this *Lusus Naturæ,* and offers the preparation to any public Museum.

Notwithstanding we knew the respectability of the communicator, we requested the favour of a member of the profession residing on the spot, to examine the preparation attentively, with all the circumstances, and oblige us with a description. In answer, he writes—

"I yesterday (Feb. 9) saw the object of your inquiry, viz. the foal, which appears perfect; and a male and two female fœtuses, having the most resemblance to calves. The three latter were preserved in spirits, in a large glass or jar, in which they were suspended by the necks. The male has a very large scrotum, like that of a bull-calf. The hoofs of all the calves are divided or cloven, and they have tails similar to animals of this genus; but I think the heads and limbs resemble a horse, as likewise do the ears. As they were all inclosed in a jar, I could not examine them more minutely.

"The foal, and calves, if they may be so called, were clearly all inclosed in the uterus. The foal, being so much the largest, first presented to view; then the calves were discovered in their proper separate membrane. Mr. Plaskett is about to send them to Sir Joseph Banks."

There are so many points directly at variance with the laws of nature in this extraordinary event, that we must have ocular demonstration, by examination of the preparation, and indisputable evidence of the facts as they have been detailed, before we can grant entire credence to the relation. It is true both antient and modern naturalists have asserted the possibility of such hybrid productions; and there was actually a breed between the ass and the cow in the South of France, Switzerland, and Italy; which, on this side the Alps, was called *Joumarre,* and on the other side, *Gimarro.* These creatures were described as docile and strong; but clumsy; and so hideous, that the breed, on that account chiefly, has been discouraged.

But, independent of the incongruity of the connexion, there are two other circumstances much more incomprehensible. Was this mare first impregnated by a horse, and afterwards by a bull? The possibility of superfœtation is scarcely admitted by modern physiologists, although it be not discordant with antient theories. Aristotle (*De Generatione,* lib. ii. cap. 5.) seems to favour the doctrine; because women and mares are the only unaparous animals that admit the male after impregnation.

Very small fœtuses have also been produced by women, with another of its full growth, with their parts scarcely more developed than embryos of a few weeks. (Vide *Smellie and Phil. Trans.*) It is true these fœtuses are represented to have been much flattened, as if by pressure of the larger one; and hence the impregnation has been supposed synchronous. We will not go so far as to contradict this hypothesis. But, after all, like almost every thing relative to generation,---it is hypothetical.

We dare not pursue this subject further; but if this incident existed as it is related, it is one that opens a new field for the reflection and speculations of physiologists.

Apple Trees.—An anonymous correspondent, in one of the diurnal journals, suggests, that in order to secure the continuance of the best kinds of apples, the round pips only should be sown. He asserts that every apple, the produce of a grafted tree, contains two kinds of pips, round and flat: the former produce the improved plant; the latter a crab similar to the parent stock. If this information be correct, it involves a question of great importance in vegetable physiology.

(*For the Remainder of* Intelligence, *see page* 266.)

A METEOROLOGICAL JOURNAL,

From the 21st of January, to the 20th of February 1815,

KEPT AT RICHMOND, YORKSHIRE,

NW from London.

D.	Barometer. Max.		Min.		Therm. Max	Min.	Rain Gage.	Winds.	Weather.
21	29	62	29	57	34	28		NE..	1 Sh of Snow.. and S..
22	29	57	29	53	33	26		NW.	1 Sh of Snow.. and S.
23	29	49	29	33	32	17		NW.	1 Sh of Sn. 2 S.. 4 M....
24	29	32	29	32	24	15		W.	1 S.... 3 Mist. 4 Cy..
25	29	35	29	13	30	21		NW.	1 Cy.. 2 Sh of Snow.
26	29	01	28	88	31	26		ESE.	1 Sh of Snow.
27	28	87	28	80	32	29		E..	1 Small Snow.
28	28	74	28	74	34	30		NE..	1 Snow....
29	29	03	28	99	35	32		SE.	1 Cy...
30	29	09	29	07	35	32	Melted	E.	1 Snow.. 2 Cy...
31	29	14	29	11	36	33	Snow	NE.	1 Snow.. 2 Small Rain.
1	29	19	29	12	36	34	1 34	NNE.	1 Rain. 3 Mist...
2	29	30	29	27	37	33		NE.	1 Mist....
3	29	09	28	90	39	33	13	SE.	1 Mist.... 4 Rain..
4	29	39	29	16	41	38		SW..	1 S... and Sh of Rain.
5	29	50	29	31	42	36		SW..	1 S... 3 Cy..
6	29	20	29	20	41	38	06	SE..	1 Mist... 2 R. 3 Cy.. 4 st..
7	29	30	29	26	42	37		SE..SW..	1 Mist... 3 S..
8	29	22	29	10	43	38	04	SE..	1 Mist... 2 R. 4 Cy...
9	29	36	29	34	42	32		W..	1 S....
10	29	32	29	14	38	35	04	NE..SE.	1 S. 2 Cy... 4 Rain
11	29	02	29		42	38	09	SE..	1 Mist... 2 Rain.
12	28	96	28	94	43	40	02	SE..SW...	1 Mist.. 2 Rain. 4 Starl..
13	29	17	29	17	44	34		SW..	1 S..
14	29	19	29	18	42	36		SSE.	1 Mist.. 2 S. 3 Cy.. 4 Mn..
15	29	20	29	13	44	38		SSW..	1 Mist.. 2 S. 3 R. 4 Moon..
16	29	07	29	06	45	39		SW...	1 Cy.. 2 S..
17	29	79	29	74	44	34	02	NW.	1 S. 2 R. 4 Moon...
18	29	67	29	66	41	36		SW..	1 Cy.. 2 S.. and Sh of R
19	29	35	29	05	45	40	13	SW.SW...	1 3 4 Cy... 2 S. 4 R..
20	29	32	29	30	43	38	10	SW...	1 Sh of Rain.. and S..

At this season of the year there is often great inaccuracy in the rain-gage. During the month of January there were only 14-100ths of an inch measured by the instrument, though there was much fell the latter end of the month, which was not melted till the first of February, besides a great deal that could not be collected in the funnel. The weather has been very misty from the beginning of February to the 16th, when there was a remarkable and sudden rise of the barometer.

Catarrhal and pulmonary complaints have been very much on the decline during this period, as also Typhus, which, in adults, has been protracted in a remarkable degree, but in children has mostly terminated much more speedily. The most prevalent diseases have been Diarrhœa, Gastrodynia, Ophthalmia, and a slight fever without any pulmonary affection, which has generally terminated favourably in three or four days. A few cases of Asthma, Epistaxis, Paralysis, Podagra, Phthisis, and Urticaria, have been under treatment.

DISEASES.	DISTRICTS. 1 S.W.	2 S.	3 S.E.	4 E.	5 N.E.	6 N.	7 N.	8 W.	9 Surry side W	10 Surry side E.	11 Hamp Highg	No. of Cases.	Fatal.
Atrophia		3			1							4	
Anasarca	1		2	4	4	4	1	3	2	2	1	24	2
Ascites	2		1		2	3	2	5	3	1		19	2
Asthma	7		6	4	29	13	36	10	6	2	6	119	9
Acne			2		1			1		1		5	
Apoplexia			2	1	4		3	3	1	5		19	6
Aphtha	1		3		10	1	4	8	3	2	2	34	
Amenorrhœa	9		6	1	5	3	8	4	5		3	44	
Asthenia	9	5	9	3	13	5	6	1	6	6	4	67	
Abortio	2		2	1	2	3	2	2		2	2	18	
Bronchitis *acuta*	3			2	1					1	2	9	4
—— *chronica*	2		2		8		6		3	6		27	1
Cancer						1		1				2	1
Cephalæa			3		1				2			6	
Chlorosis	3		5	2			6	7	2		6	31	
Cholera	6		7	3		3	3		3			25	
Chorea	1			1								2	
Cephalalgia	8	2	8	1	15	1	6	3	7	2	4	57	
Colica	4	2	6	3	5		3	1	2	2	1	29	
Catarrhus	48	39	19	51	49	19	71	33	24	40	17	410	
Convulsio	1	4		1	4		2	1		4	2	19	4
Carditis							2			1		3	2
Cynanche *Tonsillaris*	10	2	11	1	7	4	2	11	6	5	7	66	
—— *maligna*	1	3	1	1				2			1	9	
—— *Trachealis*				2						2		4	
—— *parotidea*					2	1		1	2			6	
Dysenteria		2	4	2	5	1		5	3			22	1
Diarrhœa	14	6	11	8	12	16	24	14	11	2	4	112	
Dyspnœa	11		2		3	7	2	9			4	38	
Dyspepsia	20	8	19	19	10	6	29	13	10	8	14	156	
Dysaria	3		1		3	2	2	2		2		15	
Ecthyma					5		2			1		9	
Eczema					1				1	1		3	
Erythema			1		1	1	1		1			5	
Erysipelas	3	1	2	1	3	7	6	2	2	1	1	31	
Enteritis	1	2	3	1		2		1		2		12	1
Entrodynia	1	5	6		5		3		4	6	3	33	
Epistaxis	1				1							2	
Epilepsia				2	4	1	2			2		11	
Febris *remittens*	9	14	15	7	16	4		9	7	10	5	96	
—— *intermittens*	3			5	3	1	1	4	2	1		20	
—— *puerpera*	2			2						1		5	1
—— *synocha*		4	2			4			1			11	
Furunculus	1		1			1						3	
Gastritis				2				1				3	
Gastrodynia	6	1	4	8	7	1	6	1	5	7	3	49	
Hæmatemesis				1		3		3		1		8	
Hæmaturia						1						1	
Hæmoptoe	2	1	1	4	1	5	1			4		19	
Hæmorrhois	3		5	2	11	7	6	4	3	5	3	49	
Hepatitis			2	12	10	12	3		4	2		45	2
Hysteria	2	1	4			5	2	3	5	2	2	26	
Hysteritis								1			1	2	
Hydrocephalus	1	1			3	3		2	2	2		14	11
Hydrothorax			1			3	2	3	1	2	2	14	4
Hernia Humoralis			1			1						2	
Herpes	4	3	5	1	8	4	5	4	6	2		42	

DISEASES.	DISTRICTS. 1 S. W.	2 S.	3 S.E.	4 E.	5 N.E.	6 N	7 N.W.	8 W.	9 Surry side W	10 Surry side E.	11 Hamp Highg	No. of Cases.	Fatal.
Hypochondriasis	5	3	4		2	1	3	4	2	2		26	
Icterus	4		1	1		1	6	5		1		19	
Impetigo	3				3	2	1	3				12	
Ischuria	2	1		3	1		1		1			9	
Leucorrhœa	2		5	3	8		10	1	4	1	4	38	
Lithiasis					2							2	
Lichen	1		2	1	7		1		2			14	
Lumbago			1		4	1			1			7	
Mania	2			2			3				1	8	
Menorrhagia	8	7	6	2	4	4	7	5	4	1	2	50	
Morbi *Infantiles**	16	8	11	8	20	13	19	29	16	59	7	206	
—— *Biliosi*	33		24	5	11	9	10	16	14	30	4	156	3
Neuralgia			2				1					3	
Nephritis				1		2		1				4	
Obstipatio	13		6	9	4	6	13	5	6			62	
Ophthalmia	6	6	7	3	8	3	11	11	6	3	9	73	
Otalgia			2			2			1			5	
Odontalgia	1		1			3						5	
Paralysis	3			6	5	5	6	1	2			28	
Phthisis *Pulmonalis*	4	2		7	6	2	8	6	3	1		39	3
Pertussis	3	1		2		9	8	4		1	2	30	21
Peritonitis			2	2		1		1	2	3		11	3
Pneumonia	2	5	14	13	14	16	12	13	6	18	4	112	
Pleuritis	1			2		3	4	3	2	3		18	11
Pleurodyne	2		1	3	1	2			1		1	11	2
Podagra	2	1	2	6	6	3	9	4	2	1		36	
Porrigo *larvalis*	2			1	1	2	3					9	
—— *scutulata*	2				2							4	
—— *favosa*					4							4	
Psoriasis	1	1	2	6	2	1	6		2	1	3	25	
Purpura				1	1			1				3	
Pyrosis	1	2	1		3			1				8	
Phlogosis	3		2			3			3			11	
Paronychia				1		2						3	
Rheumatis. *acut*	13	4	9	10	6	7	5	11	7	4		76	
—— *chron.*	4	1	5	6	21	6	36	3	6	2	3	93	
Rubeola	10	3		8	3	4		5		3		36	
Rachitis	2				1			1		1		5	1
Scabies	6		5	12	10	14	35	1	5	2		90	
Scarlatina *simplex*	1	1		1	3		3			2		11	
—— *anginosa*	3				1	1						5	
—— *maligna*							1					1	
Splenitis	1											1	
Scrofula	4		5		6	4		2	3	2	1	27	
Sycosis					1							1	
Tabes *Mesenterica*	1	7	1		3	3	2	1		2	2	22	
Typhus					13	4	11	1				29	3
Variola						6	2	3		1		12	5
Varicella	4	10	5	2	1				3		5	30	2
Vermes	7		4	6	7	7		6	4	2	3	46	
Vertigo	5		4	5	4	3	5		5	5	2	38	
Urticaria	1	10	2		2		5		2	1	1	24	
Total No. of Cases	396	182	331	297	476	315	508	326	260	295	154	3540	
Total of Deaths													105

* *Morbi Infantiles* is meant to comprise those Disorders principally arising from dentition or indigestion, and which may be too trivial to enter under any distinct head; *Morbi Biliosi*, such Complaints as are popularly termed *bilious*, but cannot be accurately classed.

AN ABSTRACT from the REGISTER *of those* DISEASES *of* LONDON, *presumed to originate in, or be influenced by, the State of the* ATMOSPHERE, *with a* DIURNAL REFERENCE *to the* METEOROLOGICAL TABLE.

METEOROLOGICAL TABLE,

From the 20th of JANUARY, to the 19th of FEBRUARY, 1815.

M.	Therm.	Barom.	Hygrom. Dry.	Hygrom. Damp.	Winds.	Atmos. Variation.	D.
	28 30	29⁷		45	E..	C..Snow.C...C...	20
	31 32 30	29⁸		40	NE.	C....Snow.C...	21
	30 32	29⁶		50	N.	Snow..C....Snow.	22
	33 30	29⁹		45	NW..	C..C...Snow.C..	23
	26 27 28	29⁶		35	Wc	Fog...Fog.C.	24
○	30 32	29⁶		35	Ec	Fog...C..Snow.C..	25
	32 33 31	29⁴		40	NWc	C....C...Snow.C..	26
	30 35 34	29	28⁹	30	E.	C..C...Snow..R.	27
	37 40	29		45	S..	C...C..R.C...	28
	41 42 40	29¹		46	S..	C...C..C.C....	29
	38 40	29³		20	SE.	C.C..R..	30
	41 43 42	29⁴		45	E.	Fog...C...R.R..inN	31
◑	44 50 44	29⁴		45	S.	C...C..C.C.	1
	43 45 43	29⁶		45	S.	C...C.C.C..	2
	42 44 45	29⁷		25	SE..	Fog..C...C.R..in N	3
	47 52 44	29⁵		45	SWc	C....C..C.F....	4
	43 46 44	29⁸		15	W.	F...F...C..C..	5
	45 47 46	29⁸		5	S..	C....R.C..F..	6
	45 46 45	29⁸		25	S..	C...F.C...C....	7
	45 46 45	29⁷		10	SW..	C....C..R.C...	8
◑	47 50 43	29⁷		44	W.	Fog...Fog..Fog...	9
	42 44 43	29⁶		42	E.	Fog..C..R.C...	10
	48 52 50	29⁵		35	S..	C...C..R.C..R.	11
	45 50 46	29⁵		40	SW..	C..C..R...F....	12
	46 51 46	29⁶		45	S...	R..F.F..C..	13
	42 50 44	29⁵		10	E.	Fog...C..C...	14
	42 50 46	29⁷		5	W..	F..C..C..R.C....	15
	51 52 50	29⁷		35	SW...	C....C..C...R..C..	16
◑	46 48 45	29⁵		30	W..	F.C..R...C..R.	17
	41 45	30³		20	NW...	F..F.C..C..F..	18
	45 46	30³		2	W...	F.C..R.C...	19

	Asthma.	Apoplexia.	Bronchitis.	Cholera.	Cephalalgia.	Colica.	Catarrhus.	Cynanche.	C. Trachealis.	Dysenteria.	Diarrhœa.	Dyspnœa.	Erysipelas.	Febres.	Hæmoptoe.	Morbi Biliosi.	Ophthalmia.	Paralysis.	Phthisis.	Pertussis.	Pneumonia.	Podagra.	Rheumatismus.	Rubeola.	Scarlatina.	Typhus.	Variola.	Varicella.	Vertigo.	Urticaria.
No. of Cases...	119	19	36	25	57	29	410	81	4	22	122	38	31	132	19	155	73	28	39	30	130	36	169	36	17	29	12	30	38	24
Fatal.....	9	6	5	—	—	—	—	—	—	1	—	—	—	1	—	—	—	3	21	3	13	—	—	1	—	5	2	—	—	—

Princes Street, Cavendish Square.

Total of Cases,...1991. Total of Deaths,...70.

Quantity of Rain from January 20, to February 19, one inch 78-100ths.

BILL OF MORTALITY *from January* 17, 1814, *to February* 14, 1815.

CHRISTENED.	*Jan.* 17-24.	*Jan.* 31.	*Feb.* 7.	*Feb.* 14.
Males.....	179	174	293	217
Females.....	169	144	228	193
	348	318	521	410

Total.....1597.

BURIED.	*Jan.* 17-24.	*Jan.* 31.	*Feb.* 7.	*Feb.* 14.
Males.....	173	188	246	178
Females.....	173	159	253	191
	346	347	499	369

Total.....1561.

OF WHOM HAVE DIED,

Under 2 Yrs..	103	79	99	88
Betw. 2 & 5...	42	34	55	34
5 & 10...	16	19	26	12
10 & 20...	9	13	28	12
20 & 30...	24	23	33	31
30 & 40...	32	32	44	33
Small Pox.....	11	14	16	10

Total.....51.

Betw. 40 & 50...	35	46	55	43
50 & 60...	30	36	52	37
60 & 70...	27	30	42	36
70 & 80...	17	24	38	24
80 & 90...	7	6	19	15
90 & 100...	4	5	8	4

THE early part of this interval was marked by a rather severe degree of frost, and snow in small quantity fell for several days together: but from the 28th of January to the end, a temperature prevailed much above that which usually occurs at this season. A remarkable fluctuation in the humidity of the atmosphere took place at various times, and diminished most when the wind came from the W. and S.W. Fogs have not been unfrequent, and had at all times considerable density.

Except in the early part of the month, the temperature of the atmosphere, both in London and in the country, being uniformly mild, some might have expected that the nature and effects of diseases would have been materially altered or ameliorated. But unseasonable extremes are always unpropitious to health; and whether under the influence of the one or the other, it is not perhaps so much the quantum as the character of the diseases that is changed. Thus we find in the present period the cases are increased, and also the mortality. It is the adult subject that has been principally affected.

Catarrhus has been more frequent, though not so severe as when the weather was colder. *Asthma* likewise is increased; but most of the fatal cases of it were of those reported in the last table; and one was accompanied with gangrene of the feet. *Pneumonia* has been common, and fatal; many of the cases being much protracted, and

assuming, in the latter stage, a typhoid character. Of *Phthisis* there are 27 fewer cases than in the last report; but the deaths from it are as many more as 21 to 15. *Cynanche* and *Rheumatismus* have also decreased.

Many of the *Exanthemata* have much prevailed; but those usually attended with pyrexia, and hence most dangerous, such as *Variola, Rubeola,* and *Scarlatina,* are very low in the scale of diseases in the Register; although it should be remarked, that, in the bills of mortality, the deaths from the two latter disorders are still above a medium.

Typhus exists; chiefly, however, in the 5th and 7th Districts, and in situations only where a congregation of the poorer classes scarcely leaves a chance for the extermination of infection. But most of the cases were referable to *Typhus mitior;* and were not only milder in their symptoms, but appeared also to be more moderately infectious, than the fever which occurred in the same district about six months since.

Decided marks of determination to the head have been frequently observable; and in almost all such cases a torpid state of the stomach and bowels, and considerable accumulations of fæces existed. Hence, probably, the origin of so great a number under *Convulsio* and *Epilepsia.*

One of the cases of the *Apoplexy* occurred to a young lady about seventeen years of age. On the 20th of January she had, while in bed, what was called a fit, from which she was just recovering when the Reporter saw her. Her intellects were but little disturbed; she had a disposition to stertorous sleep, and her right side was paralyzed. Leeches were immediately applied to the temples, and the bowels were emptied. The next day a blister was applied to the shaven vertex, and the leeches were again employed. On the third day it was thought expedient, in consultation, to have recourse to mercury, from the probability that a serous effusion had taken place in the ventricles of the brain. This method was pursued for three weeks, with the occasional employment of stimulants, and the application of leeches to the temples. By this treatment she gradually recovered from the hæmaplegia; but the eyes (she was, prior to this apoplectic attack, suffering under complete amaurosis) remained in the same state of total darkness. During the whole of this attack the symptoms of amaurosis were not, in any degree, influenced. As in the former instances, mercury did not produce ptyalism, though inunction was employed to a degree that would, in most systems, have occasioned very active salivation.

Examinations post mortem.—The two fatal cases of *Carditis* had supervened upon general inflammation of the thorax.—1. In one, the pericardium was an inch in thickness, and the heart much enlarged; and on its surface here and there were opaque patches.—2. In the other case, the pericardium was about half an inch in thickness, and contained in its cavity a great quantity of loose coagulable lymph; the heart was not particularly enlarged, but presented appearances of inflammation.—3. In a fatal case of *Paralysis,* there was found only fluid in the ventricles of the brain.—4. In two that died from *Phthisis Pulmonalis,* the tracheæ were much ulcerated, besides extensive ulceration of the lungs.—5. In another, there had existed great inflammation of the pleura; for it was adhering in every part, so as to leave little or no cavity in the chest; the lungs were full of large ulcers, but there were no tubercles.—6. In one who died of *Typhus,* the disease had been accompanied with much inflammation of the lungs and diaphragm. The air cells were found so compressed by effused lymph, that portions of the lungs sank in water.

The Editors *will feel much obliged, if their Reporters will, on the back of their monthly Registers, give occasionally a sketch of any remarkable case or anomaly in practice; and request that the deaths be particularly noted.*

VIII.—MISCELLANEOUS.

New Bill.—The BILL for better regulating the PRACTICE of APOTHECARIES, &c. was brought into the House of Commons last Thursday, (February 23,) by Sir JAMES SHAW, Bart., one of the Members for the CITY of LONDON. It will excite some surprise to learn, that the College of Physicians have signified their determination to oppose this Bill. But as the ground of objection is not yet stated, we cannot account for this proceeding: nor will we venture a conjecture upon this, to us, inexplicable event.

County Meeting of Surgeon-Apothecaries.—The newspapers announce a Meeting of the Surgeon Apothecaries of the County of Somerset, to petition Parliament, to exonerate every Country Practitioner from the Duty paid for one horse actually used in his profession. Can any fact declare more strongly the great difficulties under which this industrious and most useful class labour? We heartily wish them success. But why do not the whole Body in every county or great town, extending their views, assemble; and, *una voce*, represent to Parliament their grievances, and petition for redress?

Vaccination.—An intelligent correspondent residing in Yorkshire observes, that "in the Report on VACCINATION from the National Vaccine Establishment, dated May 25th, 1814, it is said, 'most of the failures 'appear to have arisen from the practice of vaccinating by a single puncture, 'and afterwards opening the vesicle and taking a portion of lymph for the 'purpose of propagating the infection.' Now much inconvenience (in the country) is likely to arise from this passage, as many people that have heard of it, will not permit any lymph to be taken from their children, though they have two pustules; which will make it very difficult for the practitioner to keep up a supply."—We conceive that this, like many other erroneous and vulgar prejudices, will, with time, cease. The better way probably in most medical cases is, not to attempt explaining motives, where the mind is too uninformed to comprehend them.

M. SERAIN, of Paris, lost his life lately from wounding his hand in the act of dissecting.

H. ALEXANDER, of Cork St. Esq. Surgeon-Oculist to Her Majesty and the Princesses, is appointed by the Prince Regent to be his Oculist in Ordinary.

IX.—NOTICES OF LECTURES.

Dr. CLARKE and Mr. CLARKE will commence their next Course of Lectures on Midwifery and the Diseases of Women and Children, on Monday, March 20th, at Mr. Clarke's house, 10, Saville Row, Burlington Gardens.

Dr. SQUIRE will, on Thursday, March 16, begin a Course of Lectures on the Theory & Practice of Midwifery and the Diseases of Women & Children.

Monthly Prices of SUBSTANCES *employed in* PHARMACY.

		S.	D.
Acaciæ Gummi elect.	lb.	5	6
Acidum Citricum		54	0
—— Benzoicum	unc.	6	6
—— Sulphuricum	P. lb.	0	8
—— Muriaticum		2	0
—— Nitricum		4	0
—— Aceticum	cong.	4	6
Alcohol	M. lb.	4	8
Æther sulphuricus		10	6
—— rectificatus		12	0
Ærugo	lb.	8	0
Aloes spicatæ extractum		6	9
— vulgaris extractum		5	8
Althææ Radix		1	3
Alumen		0	6
Ammoniacæ Murias		2	6
—— Carbonas		4	0
Amygdala dulcis		5	0
Ammoniacum (Gutt.)		12	0
—— (Commun.)		4	0
Anthemidis Flores		2	3
Antimonii oxydum		6	0
—— sulphuretum		1	0
Ammonium Tartarizatum		6	6
Arsenici Oxydum		1	0
Assafœtidæ Gummi-resina	lb.	7	0
Aurantii Cortex		4	6
Argenti Nitras	unc.	6	9

		S.	D.
Balsamum Peruvianum	lb.	50	0
—— Tolutanum		22	0
Benzoinum elect.		14	0
Calamina præparata		0	6
Calumbæ Radix		3	6
Cambogia		10	6
Camphora		8	6
Canellæ Cortex		7	0
Cardamomi Semina opt.	lb.	2	0
Cascarillæ Cortex		3	6
Castoreum	unc.	5	0
Catechu Extractum	lb.	2	6
Cetaceum		2	9
Cera alba		4	0
—— flava		3	6
Cinchonæ cordifoliæ Cortex (yellow)		7	6
—— lancifoliæ Cortex (quilled)		10	6
—— oblongifoliæ Cortex (red)		16	0
Cinnamomi Cortex		20	0
Coccus (Coccinella)	unc.	3	6
Colocynthidis Pulpa	lb.	7	6
Copaiba		6	6
Colchici Radix		3	6
Croci stigmata	unc.	5	0
Cupri sulphas	lb.	1	0
Cuprum ammoniatum		4	0
Cuspariæ Cortex		4	0
Confectio aromatica		12	0

		S.	D.
Confectio Aurantii	- -	3	6
—— Opii	- -	5	0
—— Rosæ Caninæ	- -	2	0
—— Rosæ Gallicæ	- -	2	3
—— Sennæ	- - -	1	8
Emplastrum Lyttæ	- - -	7	6
—— Hydrargyri	- -	4	0
Extractum Cinchonæ	- - unc.	2	6
—— Cinchonæ resinosum	-	5	0
—— Colocynthidis	- -	3	6
—— Colocynthidis comp.	-	1	6
—— Conii	- - -	0	8
—— Elaterii	- -	24	0
—— Gentianæ	- - -	0	6
—— Glycyrrhizæ	- lb.	4	6
—— Hæmatoxyli	- unc.	0	8
—— Humuli	- - -	0	6
—— Hyosciami	- unc.	1	0
—— Jalapæ	- 2*s.* 0*d.* Res.	3	6
—— Opii	- - -	3	6
—— Papaveris	- - -	1	0
—— Rhæi	- - -	2	6
—— Sarsaparillæ	- -	1	4
—— Taraxaci	- - -	0	8
Ferri carbonas	- - - lb.	1	0
— sulphas	- - -	1	3
Ferrum ammoniatum	- - -	5	0
—— tartarizatum	- -	5	0
Galbani Gummi-resina.	- -	10	0
Gentianæ Radix	- - - -	1	3
Guaiacum	- - - - -	8	6
Hydrargyrus purificatus	- -	6	6
—— præcipitatus albus	- -	8	0
—— cum creta	- - -	6	0
Hydrargyri Oxymurias	- unc.	0	9
—— Submurias	- - -	0	9
—— Nitrico-Oxydum	- -	0	9
—— Oxydum Cinereum	-	1	4
—— Oxydum rubrum	- -	6	0
—— Sulphuretum rubrum	-	0	8
Hellebori nigri Radix	- lb.	2	6
Ipecacuanhæ Radix	- - -	18	0
—— Pulvis	- - -	19	0
Jalapæ Radix	- - - -	6	6
—— Pulvis	- - - - -	7	6
Kino	- - - - - - -	9	0
Liquor Plumbi Acetatis	- M. lb.	1	8
— Ammoniæ	- - - -	2	6
— Potassæ	- - - - -	1	0
Linimentum Camphoræ comp.	-	6	6
Lichen Islandicus	- lb.	1	4
Lyttæ	- - - - - - -	14	0
Magnesia	- - - - - -	9	0
Magnesiæ Carbonas	- -	3	6
—— Sulphas, opt.	- - -	1	6
Manna optima	- - -	8	0
— communis	-	5	0
Moschus pod, (30*s.*)	in gr. unc.	40	0
Mastiche	- - - - lb.	6	6
Myristicæ Nuclei	- - -	22	0
Myrrha elect.	- - -	8	0
Olibanum	- - - -	4	6
Opoponax	- - - -	26	0
Opium (Turkey)	- - -	38	0
Opium (East India)	- - -	37	0
Oleum Amygdalæ	- - lb.	4	0
— Anisi	- - - unc.	2	9
— Anthemidis	- - -	6	6
— Cassiæ	- - - -	8	0
— Caryophilli	- - -	5	6
— Cajuputi	- - - -	7	0
— Carui	- - - - -	1	9
— Juniperi Ang.	- - -	3	0
— Lavandulæ	- - -	4	6
— Lini	- - - cong.	6	0
— Menthæ piperitæ	- unc.	4	6
— Menthæ viridis Ang.	- unc.	4	6
— Olivæ	- - - cong.	20	0
— Olivæ secundum	- 12*s.* to 16		0

		S.	D.
Oleum Pimentæ	- - unc.	6	0
— Ricini optim.	- (per bottle)	9	6
— Rosmarini	- - unc.	0	9
— Succini 2*s.* 4*d.*	—— rect.	4	0
— Sulphuratum	- P. lb.	1	6
— Terebinthinæ	- - -	1	3
— —— rectificatum	- -	1	9
Papaveris Capsulæ	- (per 100)	3	0
Plumbi Carbonas	- - lb.	0	8
— Superacetas	- - -	2	6
— Oxydum semi-vitreum	-	0	8
Potassa Fusa	- - - unc.	0	9
— cum Calce	- - -	0	6
Potassæ Nitras	- - - lb.	1	4
— Acetas	- - - -	9	6
— Carbonas	- - -	1	6
— Supercarbonas	- -	4	6
— Sulphas	-	1	4
— Sulphuretum	- -	2	6
— Supersulphas	-	0	6
— Tartras	- - -	3	6
— Supertartras	- - -	1	6
Pilula Hydrargyri	- - unc.	0	9
Pulvis Antimonialis	- -	0	8
— Contrayervæ comp.	- -	0	6
— Tragacanthæ comp.	-	0	4
Resina Flava	- - lb.	0	5
Rhæi Radix (Russia)	- - -	40	0
—— (East India)	- -	16	0
Rosæ petal.	- - - -	9	0
Sapo (Spanish)	- - -	2	9
Sarsaparillæ Radix	- -	7	0
Scammoneæ Gummi-Resina	- unc.	3	0
Scillæ Radix siccat	- - lb.	5	6
Senegæ Radix	- - - -	5	0
Sennæ Folia	- - -	7	0
Serpentariæ Radix	- -	34	0
Simaroubæ Cortex	- -	4	6
Sodæ Boras	- -	4	0
— Sulphas	- - -	0	10
— Carbonas	- - -	8	0
— Subcarbonas	- -	1	8
— — exsiccata	- -	5	0
Soda tartarizata	- -	3	0
Spongia usta	- - - -	20	0
Spiritus Ammoniæ	- M. lb.	4	0
—— —— aromaticus	-	4	0
—— —— fœtidus	- -	4	0
—— —— succinatus	-	5	0
— Cinnamomi	- - -	3	0
— Lavendulæ	- - -	5	6
— Myristicæ	- - -	3	6
— Pimentæ	- - -	3	6
— Rosmarini	- - -	4	0
— Ætheris Aromaticus	- -	7	0
— —— Compositus	- -	6	6
— —— Nitrici	- -	4	0
— —— Sulphurici	- -	6	6
— Vini rectificatus	- cong.	28	0
Syrupus Papaveris	- - lb.	2	0
Sulphur	- - - -	0	8
— Sublimatum	- -	0	10
— Lotum	- - -	1	2
— Præcipitatum	- -	1	2
Tamarindus opt.	- - -	2	6
Terebinthina Vulgaris	- - -	0	10
Terebinthina Canadensis	- -	7	6
Terebinthina Chia	- - - -	9	0
Tinct. Ferri muriatis	- -	5	6
Tragacantha Gummi	- - -	7	0
Valerianæ Radix	- - - -	1	6
Veratri Radix	- - - -	1	6
Unguentum Hydrargyri-fortius	-	5	6
—— —— Nitratis	-	2	8
—— —— Nitrico-oxy.	-	3	0
Uvæ Ursi Folia	- - -	3	0
Zinci Oxydum	- - -	6	6
— Sulphas purif.	- - -	2	6
Zingiberis Radix opt.	- - -	3	6

Prices of New Phials per Gross.——8 oz. 70*s*—6 oz. 58*s*.—4 oz. 47*s*.—3 oz. 43*s*.—2 oz. and 1½ oz. 36*s*.—1 oz. 30*s*.—half oz. 24*s*.——The London Glassmen allow 10 per Cent, ready money.——The Manufacturers in the Country, where all Phials are made, allow 27½ discount, at three months credit, (carriage free,) to London.

Prices of second-hand Phials, cleaned, and sorted.——8 oz. 46*s*.—6 oz. 44*s*.—4 oz. 35*s*. 3 oz. 30*s*.—2 oz. and all below this size, 25*s*.—Three months credit.

Best Leeches, 9*s*. Bourdeaux Leeches, 6*s*. per dozen at Covent Garden Market.

LITERARY WORKS, &c.

A New Series of the *Bulletin de Pharmacie* has just commenced, under the title of *Journal de Pharmacie et des Sciences accessoires.* The Editors are, MM. Cadet, Planche, Boullay, Bondet, Virey, and Pelletier, Members of the Pharmaceutical Society of Paris.

The first Number of a new Medical Journal, to be named *Journal de Chirurgie Militaire,* will appear this day, the first of March. Doctor Fournier of Paris is the Editor.

Nouvelles Observations sur les Abeilles, par F. Huber. Seconde Edition, Deux vol. 8vo. avec un Atlas de 12 Planches in 4to. A Genève.

Mr. Accum has in the press a Treatise on Gas Light: exhibiting a description of the apparatus and machinery best calculated for illuminating streets, houses, and public edifices with carburetted hydrogen or coal gas; with remarks on the utility, safety, &c. of this new branch of civil economy.

A Translation of Orfila's popular work on Animal, Mineral, and Vegetable Poisons, and of M. Larrey's interesting Memoirs of Military Surgery, are preparing.

MONTHLY CATALOGUE OF BOOKS.

Observations on the Symptoms and Treatment of the Diseased Spine, &c. By T. Copeland, Esq. Fel. of the Roy. Col. Surg. 8vo. plates. Callow.

The Medical Friend to the Asthmatic Patient. By W. Nisbet, M. D. 12mo. Callow.

Observations on a Case of Strabismus divergens, or Squinting. By M. Roux. 12mo. Cox and Son.

Engravings of the Thoracic and Abdominal Viscera, and the Canals connected with them, &c. By A. Monro, jun. 4to. Longman and Co.

An Attempt to establish a pure Scientific System of Mineralogy. By J.S.Berzelius, M.D. Translated from the Swedish by J.Black. Baldwin & Co.

Observations on Apparent Death. By J. Curry, M.D. F.A.S. Second Edition. 8vo. Cox and Son.

An Essay towards the Improvement of some of the important Instruments in Surgery, &c. By W. Jardine, Surgeon R.N. 8vo. Longman & Co.

IMPORTED — Anatomie et Physiologie du Système Nerveux en général, et du Cerveau en particulier. Par F. J. Gall et G. Spurzheim. Tom. 2. Part I. Callow.

INDEX INDICATORIUS.

Communications from Dr. Nicoll *of Madras,* Dr. A. Copland Hutchison, Mr. Mansford, Mr. Bellingham, A Sheffield Accoucheur, Ὠδινοβοηθος, &c. *are come to hand.*

We have received the New Work De l'Education Physique de l'Homme, *from* Dr. Friedlander *of Paris, with the accompanying Note, and trust the* Repository *will continue to merit the handsome terms in which the Doctor speaks of it.*

It is with great reluctance that the EDITORS *ever occupy any portion of the pages of the* Repository *with matter in which they have a personal interest. Nor would they, in the present Number, have obtruded so far, if they had not conceived the fate of an important public question involved. However, that their readers may sustain no diminution of information or amusement, an additional quarter of a sheet is printed, and added to the usual contents.*

The Sale of the REPOSITORY having so greatly exceeded the limits of the most sanguine expectations, some of the Numbers *being already out of print, the* Editors *respectfully inform the Public, that a Re-print is now in the Press, and in a few days the First and Second Volumes will be again complete, (Price* 15s. *each in Boards,) or any single Number may be had, (Price* 2s. 6d.*)*

THE

LONDON MEDICAL REPOSITORY.

No. 16. APRIL 1, 1815. Vol. III.

PART I.

ORIGINAL COMMUNICATIONS.

I.

A General View of the Diseases usually occurring in Boys during the Period between Infancy and Puberty, deduced from Observation of those in Christ's Hospital. By Henry Field, Member of the Society of Apothecaries, London, and Apothecary to Christ's Hospital.

(*Continued from Page* 43.)

TABLE OF DISEASES.	1814. Dec.	1815. Jan.	1815. Feb.
1 Cynanche Tonsillaris	4	1	3
2 ——— Trachealis	—	2	1
3 Tussis Catarrhalis	3	2	2
4 Febris Synochus	3	1	8
5 —— Typhus	1	—	—
6 —— Catarrhalis	—	4	2
7 Odontalgia Catarrhalis	2	2	2
8 Otalgia	—	1	1
9 Nausea, Gastrodynia, and Diarrhœa	8	3	4
10 Cephalea	1	—	2
11 Rubeola	1	17	—
12 Varicella	—	—	1
13 Pertussis	—	—	1
14 Epilepsia	2	—	—
15 Obstipitas Catarrhalis	1	2	1
16 Herpes Zoster	—	—	1
17 Pompholyx benigna (in faciem præcipue)	—	1	—
18 Oris interni excoriatio Erysipelatosa	1	—	—
Total	27	36	29

The three winter months have been, with the exception of a fortnight or three weeks in January, unusually mild. The number of cases admitted into the Infirmary was not particularly large; but the diseases have been more important, and the deaths more numerous than generally happen. In the month of January seventeen cases of Measles occurred; and in February Fever was the most prevalent malady.

In December a fatal case of Typhus took place: the boy was eight years old. The early symptoms of the disease discovered so decided a determination to the head, that I had reason to believe Hydrocephalus was approaching. After a few days these appearances in a great measure subsided, and the characters of Typhus became very clearly marked: the patient sunk under it about the twenty-first day of the disease.

The cases of Measles which occurred in January were not nearly so numerous as have generally happened with us when this malady has entered the school. The greater part of them went through the disease without any very alarming symptoms, although several of them had so much inflammatory action as to require the use of the lancet. Recovery in much the greater number took place very gradually, much more so than would probably have been experienced in a warmer season of the year. Two or three cannot yet be considered as in a state of perfect health.

The case of one of these patients shall be related more largely.

W. C. B. a boy about ten years of age, came into the Infirmary on the 12th of January, with the usual antecedent symptoms of Measles. There was nothing remarkable in his appearance for the first three or four days. The eruption then commenced, but by no means in that copious and florid manner that frequently occurs in favorable states of this disease. About the fifth day the pulse became very frequent; the heat very considerable, with occasional delirium; the breathing quick, but without much cough; the tongue was covered with a dry brown incrustation, which clearly discovered the nature of the disease, and that there was not that inflammatory diathesis which attends genuine measles; but a low typhoid disposition, characterizing that species which has been at various times observed by medical writers, and is particularly described by Dr. Watson, in the fourth volume of *Medical Observations and Inquiries*. His paper contains much useful information on this disease, derived from extensive practice in the Foundling Hospital.

General bleeding, though so highly applicable to the inflammatory state of measles as it most frequently occurs, could not with propriety be adopted here. Leeches, however, were

applied to the sternum, and this was followed by blistering, accompanied by gentle aperients, ipecacuanha in small doses, and such other remedies as the symptoms seemed from time to time to require. Our endeavours were all unavailable. In the night preceding his death he had much delirium; on that morning considerable inflammation was observed about the throat, with great hoarseness, but very little disposition to cough. He died on the evening of the 20th of January.

Much having been lately written on the subject of Vaccination being followed by a more malignant measles than was usually observed before the discovery of that practice; I thought it right to give particular attention to this circumstance, though I consider the question as having been already pretty well decided.

Of the eighteen boys affected by measles, sixteen have been vaccinated; one has had natural small-pox; and the other, from the appearance of the arm, I believe to have undergone variolous inoculation, though of this I have no means of certain information, his friends living in Scotland: neither of the two last-mentioned appeared to fare better than their fellows; indeed the boy who had had natural small-pox was one of the more severe cases. I have already mentioned that recovery was very slow; but I am satisfied not more so than may generally be expected in the winter season.

I have remarked that continued Fevers prevailed much in February. These were all of the synochus kind; and though some were tedious, yet they all, excepting one, are either recovered, or appear to be in a favorable state of convalescence. The exception was H. N. a boy in his fourteenth year.

He was attacked with the common symptoms of fever about the 3d or 4th of February, which continued without any alarming circumstances arising until the morning of the 22d, when he was suddenly seized with what the attendants considered as a fit. Visiting him almost immediately, I discovered him labouring under a complete hemiplegia of the left side. He was nevertheless sensible, and his speech unimpaired. He had some time before complained of a pain on the side, which appeared to be muscular, and was relieved by blistering. To afford relief under his present very unexpected and dangerous state, purgatives were administered, which for the most part acted without material difficulty; leeches were applied to the temples; the head was shaved, and covered with a large blister; the warm bath was employed; and such other medicines besides as appeared most likely to be serviceable: but in vain. Though his intellects were in general clear, yet he was occasionally delirious. The paralytic side did not recover its power of motion, but the arm assumed a bent position, and became somewhat

rigid. He was so perpetually tossing about his arm and leg on the opposite side, that there was some difficulty in confining them so as to prevent his hurting himself: in this manner he continued until the 27th of February, when he was released by death.

This singular termination of fever induced me to request leave to examine his head; which was opened on the next day, in my presence, by Mr. Stanley, who has favoured me with the following account of the appearances upon dissection:

"Upon the removal of the dura mater, the arachnoid membrane investing the whole of the right hemisphere of the brain was found to be thickened and opaque. The vessels in the subjacent pia mater were more distended by blood than ordinarily: the cellular texture of this membrane being filled by an aqueous secretion. The surface of the left hemisphere appeared in a natural state. The substance of the brain throughout every part of the organ was perfectly healthy. In the lateral ventricles were between three and four ounces of transparent water. The arachnoid membrane in various parts of the basis of the brain was also thickened and opaque; and in two or three points near the medulla oblongata and cerebellum there appeared small depositions of lymph upon its surface."

Christ's Hospital, March, 1815.

II.

Case of Delirium Tremens, with Pathological Remarks. By J. G. Mansford, Frome, Somersetshire, Member of the Royal College of Surgeons.

At four o'clock in the morning of the 19th of January, I was called to C. W., by trade a carpenter, thirty-five years of age, of rather robust make, and who had for some years been in daily habits of intemperance in drinking, but which seldom amounted to absolute intoxication. He had, for three or four weeks, been observed to lose his appetite; to be bloated and flushed in the face; to have a peculiar stare with his eyes, which were not however very red; and to have slight tremors of the limbs. For three nights immediately previous to my visit, he had been watchful and restless. He went to bed as usual on the preceding evening; but rose again in much alarm. I found him sitting in a chair by the fire side; sensible, but in great agitation; for which he could not assign any cause. He answered every question rationally that was put to him, but in a hurried and somewhat confused manner. His motions

were equally hurried. When I asked him for his hand, he threw it out with a jerk. On attempting to feel the pulse, I found the tendons working strongly; but ascertained it to be between 80 and 90, full, and irregular. The movements of the eyes were as quick as those of the rest of the body; they were slightly suffused, and the pupils were extremely contracted. The skin was cool, the tongue clean, the countenance neither pale nor red: he complained of heaviness and a sense of heat on the top of the head, with noise in the ears; but denied having any pain. Sixteen ounces of blood were taken from the arm, a blister was applied to the nape of the neck, vinegar and water were directed to be applied to the shaved head, and a strong cathartic was given. The blood was drawn suddenly, but produced not the slightest faintness or debility. He got up and walked a few paces afterwards with a firm step, expressed himself much relieved, and went to bed. At ten o'clock I found him with every symptom worse; pulse 110, increasing during the time I was with him to 120, less irregular, but more feeble; skin warm, but not hot; with frequent breaking out of perspiration; eye more suffused, and the pupil more dilated; in great terror, with universal tremor, and making frequent violent struggles to get out of bed. He fancied he was about to suffer the sentence of the law for some dreadful crime; that guards stood on each side of his bed, while the room was filled with others ready to convey him away. He burst often into tears, which gave place to rage at confinement, and earnest entreaties to be set at liberty. To the phantasm above mentioned succeeded others, exciting equal alarm and impatience of restraint; as that robbers were in the next room stealing his property; that he had money to receive which would be lost if he were not allowed to go himself for it; that he had work unfinished requiring his immediate attendance, &c. The purgative had produced two stools.

The nature of the complaint appearing now not at all doubtful, I determined on adopting the practice recommended by Dr. Sutton: accordingly one grain of the extractum hyoscyami and ten drops of tinctura opii were directed to be given every four hours. At five o'clock I found he had slept about half an hour; after which short repose, he was more calm and quiet; and the pulse reduced to 100; but from this time till ten, when I again saw him, the symptoms had become worse. The tremor, restlessness, and delirium, had increased in violence. He was talking incessantly; frequently crying; and appeared in a state of great alarm and horror, which was strongly depicted on the countenance, now become pale. He was constantly picking the bed clothes, sometimes at a distance from him; but no sooner did his fingers appear to obtain a

hold, than they were instantly retracted as if they had been bitten, or had touched something hot*. He continued to make frequent powerful efforts to get out of bed, to go on some imaginary enterprise, or escape some impending danger. Notwithstanding this state of delirium, he occasionally knew those about him, particularly myself; and made frequent anxious inquiries for me in my absence. The medicine was directed to be continued at intervals of three hours. On the following morning I found him in every respect worse; the pulse varying from 160 to 180, when it could be counted; but the artery gave for the most part the sensation of a tremulous flutter, rather than a distinct pulsation; the face was pale; and the eye dull and pearly.

A draught, containing forty drops of tinctura opii, was now directed to be given every three hours. From ten in the morning to the same hour in the evening, five draughts were taken, containing in all 200 drops. At eleven, when I saw him, although his whole appearance was far from flattering, (he shewed no disposition to sleep; the pulse was in the same state, and his countenance sunk and expressive of much anxiety;) yet there were symptoms from which I drew favorable expectations. He was more calm; the sweats had ceased; the skin was cool; but the extremities were sufficiently warm; and the pupils, which in the morning were widely dilated, appeared now contracted to their smallest diameter. The draughts were directed to be continued, with the addition of ten drops of tinctura opii to each. On the following morning (the 21st), I had the satisfaction to find, that, after having continued in the same state of vigilance and delirium till six o'clock, he fell asleep, and slept till nine, when he awoke more sensible and calm: being alone, he got out of bed, left his room, and ascended some stairs in search of a close stool; he had a plentiful evacuation, and passed a large quantity of urine, which had been retained forty-eight hours; after which he again fell asleep, and slept about an hour and a half, when he awoke completely sensible, perfectly calm and composed. Pulse 120, and regular. He retained no recollection of any thing that had passed. In the course of the day he slept about eight hours, and in the intervals of sleep expressed a desire for food. Two basins of mutton broth were taken, and tea and toast twice. In the

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* Dr. Saunders describes the motion of the hands in Delirium Tremens, as though "the patient might, with imperfect vision, be searching for things, and occasionally rapidly catching or avoiding them; such, for instance, as if in search for rats or mice; being things he wishes partly to lay hold of, and partly to avoid."

evening he had another evacuation; the pulse was reduced to 108; no more opium was administered this day, the last dose having been taken at four A. M., two hours before the first sleep. On the 22nd I found that he had slept the greater part of the preceding night: not the slightest tremor nor aberration of mind now remained; his whole appearance was that of an advanced state of convalescence, rather than of one just escaped from so dreadful a disease: his pulse was at 96, regular, but weak; and he retained sufficient strength to get out of bed himself, which he did again to the close stool. In the course of the day he had three evacuations, of natural appearance; the pulse in the evening was reduced to 88; he complained of slight head-ache; but slept well the following night, without the aid of more opium. In the morning the head-ache was gone, and the pulse at 80, soft, more full, and steady. Two spoonfuls of the following mixture were directed to be taken twice or three times in the course of the day:—

℞ Infus. Gentianæ, Mist. Camphor. āā f ℥ij.
Sp. Lavand. C. f ℥i. Misce.

From this time his recovery was rapid; he had one or two restless nights, for which ℳxx tincturæ opii were given at bed-time; and he is at this time in better health and strength than at the distance of many weeks from a former attack of the same disease, differently treated.

The opiate was given in small doses at first, with the caution almost inseparable from a mode of treatment new and at variance with every pre-conceived opinion of the nature of the disease: and it was not without a recurrence to Dr. Sutton's cases, and a subsequent case by Mr. Parry of Bristol, in the *Medical and Physical Journal*, that a full confidence in the medicine was acquired. The quantity of hyosciamus and opium taken in the course of the disease, was equal to about five hundred drops of tincturæ opii; the last three hundred having been taken in the space of eighteen hours.

This was the second attack of this disease, (as remarked above,) the first having occurred about a year and a half ago; which, as a supposed variety of Phrenitis, was conducted on the depleting plan, till it became obvious that it could not be pursued any further. On this occasion the delirium, which was of the most raving kind, subsided suddenly, after three days' continuance, into a low muttering state; while the tremors remained with increasing debility, and a pulse scarcely perceptible. Strong doses of different antispasmodics were resorted to: the disease was very protracted; and the recovery for a long time uncertain. I was altogether exceedingly dissatisfied with this case, which I was compelled to believe I had mistaken. Dr.

Sutton's publication shortly after threw that light upon it which I had looked for before in vain, and which in the present instance has, in all probability, saved a life which must otherwise have been lost.

The disease and its antidote are still an enigma. What the real state of the brain is — what relation it bears to phrenitis—and what is the mode of action of the medicine—remain yet to be investigated. The pallid countenance and pearly eye, however, even in the height of the disease, may lead us to conclude that there can be no increased vascular action in the brain; and, consequently, that it cannot be received as a species of disease, of which phrenitis is the genus. Is the subtraction of blood in the beginning of the disease necessary to the safe administration of the subsequent remedy? It appears, in all the cases which have been recorded, to have been followed by an increase of the symptoms; and Dr. Armstrong declares it inadmissible, and even dangerous; but, perhaps, any hesitation as to the real nature of the disease in its commencement, may render such a step adviseable; as its not being followed by a diminution of the symptoms will afford one of the surest proofs of its true nature. On the other hand, should it prove to be one of those for which, in its early stage, it may possibly be mistaken, the neglect of this remedy, and the adoption of the narcotic plan to the extent here pursued, might be of serious consequence.

But as this disease must have occurred where it has not been known, as it is no doubt of fatal tendency, and, if mistaken for any other, must almost infallibly prove so; as there are other diseases which bear a sufficient resemblance to it to render such a mistake, to the young practitioner especially, very probable; and as, on the contrary, to mistake those other diseases for the one in question must be equally fatal; it will be acknowledged to be of the utmost importance to endeavour to establish a correct diagnosis; and I may be excused lengthening a little this paper, by collecting from the cases which have been before published, and my own observations, those symptoms which appear to constitute *Delirium Tremens* an essentially distinct disease.

The disease for which *Delirium Tremens* is most likely to be mistaken, and with which it has till lately been confounded, is *Phrenitis*; as happened to myself in the former attack of the subject of the above case; and hence the confusion and discordance in the histories and treatment of that complaint. Dr. Cullen, so clear in his descriptions, is not a little obscure in that of this disease. He has entirely eluded a description of symptomatic phrenitis, although acknowledging it to be the most frequent; but if his nosological definition of the idiopathic form of the

disease be correct*, one would wonder how it could ever have been confounded with *Delirium Tremens.* The four first symptoms of his definition, which differs but little from that of preceding nosologists, are not essential to *Delirium Tremens*, which may exist in its greatest violence without any of them; and indeed the furious delirium of this disease, without fever, and without much pain or determination of blood to the head, seems to be its leading character. I could not learn, at any period of the case above related, that any fullness, or throbbing, or pain of the head was felt: the carotid and temporal arteries, in perfect unison with the pulse at the wrist, beat for the most part feebly; and during the short time that the countenance was said to be flushed, there was no turgescence nor distension; and the eyes, although more suffused, and looking with much steadiness, had nothing of fierceness or sparkling, and the pupils were more dilated. It is to be remarked also that this suffusion came on shortly after a full bleeding.

Neither is it likely that what is called symptomatic phrenitis can be mistaken for *Delirium Tremens;* that is to say, the phrenitis of inflammatory fever, of rheumatic or other metastasis, and of acute hydrocephalus: for in all of them, and in every thing which bears, or ought to bear, the name of phrenitis, there must be pyrexia—there must be pains of the head —and an obvious determination of blood thither.

Another disease for which *Delirium Tremens* may be mistaken in its early stage is *Mania;* to an old definition of which it forms indeed a striking resemblance; viz. waking delirium without fever: but the previous habits of the patient, the tremors, and state of the pulse in the progress of the disease, will sufficiently distinguish it.

Another, and the only remaining state for which *Delirium Tremens* can be well mistaken, is the delirium of low fever. Here again the tremors, and pulse much more frequent than almost ever happens in fever, will assist us to discriminate: add to these, that the tongue is generally moist, and but slightly furred, or perhaps quite clean; and the heat of the body does not continue steadily above the natural standard. I may here remark of the tremors, that they are constant; and that, when not so observable, there will be found a subsultus of the tendons at the wrist. If any thing be given the patient to drink, the vessel containing it will be caught with a snatch, conveyed in tremulous impatience to the mouth, and the liquor swallowed with avidity, although he be not at all thirsty.

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* Pyrexia vehemens; dolor capitis; rubor faciei et oculorum; lucis et soni intolerantia; pervigilium; delirium ferox.

Delirium Tremens appears then to be distinguished from real inflammation of the brain by the absence of pyrexia, of pain of the head (at least as an urgent symptom), of determination of blood to the head, and of intolerance of light and sound; while bleeding, if resorted to, produces no abatement in the violence of the disorder. It is to be distinguished from mania, by the previous history of the patient; by the tremors, and the state of the pulse: and from the delirium of low fever, by the want of any previous febrile affection; by the moist and slightly furred tongue; by the skin being generally moist, though varying in temperature; and especially by the disproportion between the degree of strength and the state of the pulse; for such a pulse in fever could only occur in the last extremity of weakness, and would be regarded as a sure mark of approaching dissolution.

Its own peculiar marks are, its occurring, as it appears, invariably in persons who have been addicted to intemperance in drinking; the attack having been preceded by loss of appetite, irregularity of thought, restlessness and watchfulness, or frightful dreams; the tremors, and peculiar picking, so different from what has been termed collectio floccorum; the unwearied watchfulness and delirium—sometimes moderate and tractable, at others, raving and furious, but seldom irascible; the pallor, and anxiety of countenance; and the frequency of the pulse, while the strength is not proportionably reduced.

February, 1815.

III.

Cases of Fracture produced by the Action of the Muscles. By A. Copland Hutchison, M. D. Surgeon of the Royal Hospital, Deal.

In the Number of the *Medical Repository* for last February, (p. 148,) it is stated by the Editors, in a short exordium to a case of fracture of the femur by the action of the muscles, "That fractures of bones, in a state of disease, produced by the action of muscles, have been frequently observed; but, that such a circumstance can happen to a sound bone, has been much doubted, &c."

With a view to lessen any doubts that may exist in the latter case, or, at least, to shew the "possibility of such an event," I shall take the liberty to offer my testimony on the subject.

The Coxswain of a boat belonging to Captain (now Admiral) Scott, or to Commodore Owen, was admitted into the Hospital

under my care, about two or three years since, with a transverse fracture of the patella, and with the upper portion of the fractured bone drawn upwards nearly two inches.

The patient was in the act of landing one of these officers* on the beach at Deal, when there existed some surf; and, in order to prepare for his Captain's landing dry, he swung himself from the bow of the boat to the beach by the aid of a boat-hook. He alighted on the stones with some degree of force, leaving the boat-hook behind him in the water; and at this moment, considerable muscular exertion was required to steady him, and prevent his falling backwards into the sea. The extensor muscles of the leg, were therefore, thrown into such strong action, that the fracture of the patella was instantaneous, and the pain in the knee in consequence so great, that he sunk upon the beach unable to stand, or move from the spot where he lay.

He was a short muscular man, in the possession of high health; and I recollect remarking to the hospital mates at the time, that, although his muscles were powerfully strong, I was somewhat struck with the circumstance; because, from the short stature of the man, the accident did not appear to me so likely to occur, as in a subject where the lever of the extensor muscles acting upon the patella was greater.

Another case not quite so analogous to the subject, I may also mention from its singularity:

Thomas Wills, a man of colour, and middle age, was sent over to my wards from the Medical Department, a very few months ago, on account of Syphilis. He was very much emaciated when he came under my care, from a previous attack of pneumonia; and upon his strength recovering a little, he was placed on a course of mercury, which he continued nearly six weeks; during the greater part of which period his mouth was slightly affected. A month after the exhibition of the medicine had ceased, and his health and strength were considerably improved, one of his comrades had something stolen from him, which occasioned a general search in the ward. Wills was desired to raise up his hair mattress that it might be looked under; and on placing himself towards the bottom of his bed, and raising or rolling the mattress up, his arm was heard to snap that instant; this arm fell useless by his side, and he complained of an excruciating pain in the humerus,

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* It is impossible for me to discover by the hospital books, which officer the patient belonged to, as cases of fractured patella were admitted from the ships of both officers; but I have a perfect recollection of its being one of the two named in the text.

which he was obliged to support, by applying the other hand to the elbow.

On examination a few minutes afterwards, I found the bone fractured transversely, exactly at the insertion of the deltoid muscle; and the patient declared, that no previous fracture of that bone had ever occurred during his remembrance.

It is possible, that the bones in this man's case were not altogether in a healthy state at the period of the accident, inasmuch as there may have existed an excess of earthy matter in them, in consequence of the *more ready* action perhaps of the absorbents on the softer parts of the bones, during the previous and recent administration of mercury; for it will be generally admitted, I believe, that this medicine gives an increased excitement to the action of absorbent vessels, where the system is in any way under its influence.

February, 1815.

IV.

A Case of Dropsy of the left Ovarium, successfully treated. By W. Newnham, Surgeon-Apothecary, Farnham.

An authentic history of one case of ovarian dropsy, where the patient has been restored to the enjoyment of perfect health, by the operation of paracentesis, if it be not unique, yet is rarely to be found, and cannot fail, from its infrequency, to interest those whose chief desire should be to mitigate the ravages of disease.

Mrs. Mills, æt. 38, the subject of the following case, is the mother of one child, who is now eleven years old, and has not been pregnant since the birth of this only daughter.

About seven years before I visited her, her attention was, as she informed me, excited by considerable uneasiness in the left groin and inferior part of the abdomen on the left side; which gradually increased, and was accompanied with head-ache, pain at the scrobiculus cordis, and functional disturbance of the abdominal viscera. At this time, the patient experienced much difficulty in making water; and this, together with her other symptoms, was ascribed to a nephritic origin, and treated accordingly. After an interval of a few months, these symptoms subsided, and she became sensible of an increase of size in the hypogastric region, which continued gradually to enlarge, and occupy the whole abdomen; and, besides various uneasy sensations, gave rise to a considerably disturbed state of the bowels, accompanied with dyspeptic symptoms. The secretion from

the kidnies was never much diminished nor altered, either in quantity or quality. When the patient was tolerably free from dyspepsia, her health was no more affected, than by her being unwieldy. At one time she was treated for tympanites; at another, for dropsy, by active cathartic and hydragogue remedies, and by the whole class of diuretics, particularly digitalis, squill, and calomel. These remedies produced no effect on the disease; on the contrary, the size of the tumor was now so much increased, as to cause a painful sense of distension of the abdominal parietes.

The patient gradually lost her health; she became greatly emaciated, and worn out by restlessness, loss of sleep, and distressing dyspnœa; and seemed to be anxiously awaiting her dissolution as the termination of her sufferings. Under these circumstances, I first saw her, in the spring of the year 1812. At this time, there had been no increase of size for four months, and the disease remained stationary till the time of the operation. Her symptoms, however, remained the same, and her health was declining. The operation of paracentesis was proposed to her; but as she thought the disease irremediable, it was long before she could make up her mind to submit to what appeared to her so terrific.

At length she consented; and on the 15th of July 1812, in the presence of Mr. Newnham, sen. and a neighbouring surgical friend, thirty-seven pints of a serous and almost colourless fluid were evacuated through a puncture made in the linea alba. My patient bore the removal of so large a quantity of water pretty well: and the abdominal parietes being well supported with a long flannel roller, she was removed to bed.

16th. She has passed a good night, and feels quite comfortable excepting a little soreness about the sides of the abdomen: the tongue is clean, and the pulse soft. A light and moderately nutritive diet was prescribed.

17th. Has slept but indifferently the last night:—has a quick, small, and vibrating pulse; furred tongue; and complains not only of increased tenderness, but also of considerable pain in the hypogastric region. A bolus of calomel was directed for her, to be succeeded by a solution of the sulphate of magnesia in infusion of senna.

18th. The aperient medicines have produced a good effect upon the bowels, and she is better; complains less of pain and tenderness in the hypogastrium; her pulse is less quick, softer, and fuller—the tongue is moist, and cleaner. After this, she needed but little assistance from medicine; and though the tenderness of the hypogastric region continued for a length of time afterwards, yet, she gradually recovered, under the use of a light

infusion of cusparia, conjoined with small doses of rhubarb to keep the bowels soluble. She soon regained her former health and strength; and though two years and a half have elapsed since the period when the operation was performed, she has not experienced a symptom of her old complaint, and is now in perfect health.

This was evidently a case of ovarian dropsy in its simplest form:—viz. where the effused fluid was contained in one cyst only, and unaccompanied with other diseased organization. The fact of paracentesis having proved a permanent cure for the disease, is, however, rare: and although we cannot possibly expect the like to be the case, where there are many cysts in a state of progressive enlargement—where the accumulated fluid is of a morbid character—or where there is any other diseased organization of the ovarium:—still the rationale of the cure in the present simple form of encysted dropsy becomes an object worthy of inquiry, and the multiplication of facts tends to facilitate the desired explanation.

In what way then was this cure effected? It will be seen, that for three quarters of a year before the operation was performed, the disease had been nearly stationary—not as respects its effects on the constitution, but as regards the progressive accumulation of the fluid. Is this a fact of frequent occurrence? Another instance of the same kind has lately come under my notice, in a patient evidently the subject of ovarian dropsy, who has experienced no increase of size for some years, and who, in consequence, satisfied with her present circumstances, refuses any attempt to lessen her enormous bulk.

Is it possible, that, at this period, the balance between the action of the exhalents and absorbents may sometimes be restored, and increased effusion prevented? Or may we suppose, that, subsequent to the operation, the adhesive inflammation was excited in the cyst, and that its cavity was obliterated, by the agglutination of its opposed surfaces, from the consequent deposition of coagulating lymph? The pain and tenderness of the hypogastric region, and the symptoms of febrile irritation which succeeded the operation, together with the circumstances attendant on those cases of ovarian dropsy which have been accidentally cured, would seem to favour the latter suggestion. Where there is so little of ascertained fact, and necessarily so much conjecture, I will not hazard an opinion, but content myself with the above suggestions;—earnestly hoping that a future day will afford me some opportunity of ascertaining the exact condition of the parts affected.

January, 1815.

V.

Queries on the Operation of Cephalatomia. By A Young Accoucheur.

Judging it to be the object of the *Medical Repository* to convey instruction to the inquiring mind in every branch of the Medical Profession, I beg leave to solicit attention to the following queries:

1.—After the operation of *Cephalatomia*, the contents of the cranium being evacuated, would it not be better, to expedite the delivery by the use of the blunt-hook or crotchet, than to wait, as some authors recommend, six, twelve, eighteen, or twenty-four hours, that the head may, if possible, be accommodated to the passage?

2.—Does not rupture of the uterus oftener arise as a consequence of its long-continued action, and possibly the pressing of the craggy bones of the cranium on the cervex-uteri, than from any other cause?

Sheffield, February, 1815.

VI.

Observations on the Cesarean Section, and Premature Delivery. By Ωδινοβοηθος.

The inferences which an experienced Professor of Midwifery has drawn from the case of ruptured uterus recorded in the *Repository* for *February* last, p. 89, appear to me not altogether tenable; and as these inferences involve consequences of great importance to the science of midwifery, I am induced to offer a few remarks upon the subject; and this I the more willingly undertake, because the author of this, and some other interesting communications on obstetrics, is obviously actuated by the desire of founding a good practice upon a rational theory. It is, I apprehend, attempted to be proved by this case:

1st, That sometimes the Cesarean Operation is to be preferred to the operation of perforating the head of the child; and that in the woman, who is the subject of this case, such an operation would have been expedient.

2dly, That in some cases it may be right to induce premature labour, at an earlier period of pregnancy than will allow the child to be born capable of living.

I am not at all inclined to question the propriety of some-

times having recourse to the cesarean section, because it has been proved, that there are women with pelves so extremely distorted, as to render delivery by the perforator and hook impossible; and consequently no other means of bringing the child into the world remain, but by this operation. When, however, it is recollected, that, with scarcely a single exception, this dreadful operation has in England proved always fatal to the mother, it is impossible to contemplate it without horror, or to recommend it except in cases of the most urgent necessity. But in the case before us, did this necessity exist?

We are told, that "the pelvis was preternaturally small, but not distorted." Are there any cases of preternaturally small, *but not distorted*, pelves, in which the cesarean section can be necessary or justifiable?

One cannot help regretting, that the exact dimensions of this pelvis are not stated. Sometimes, during the life of the patient, it is impossible for the most experienced Accoucheur to ascertain this accurately, either by his fingers, or by the various *pelvimeters* that have been invented for the purpose; but as this poor woman was opened after death, the dimensions might easily have been taken. Exactness as to this particular is, however, more desirable, with regard to the question of inducing premature labour, than in reference to the cesarean section.

We are informed, that "the dissection demonstrated, that the excitement of labour (in the second pregnancy) had been too long delayed."

The poor woman, it is said, fell with child "about the beginning of February 1814," and on the 25th of September, the labour was artificially induced; a period of, at the utmost, thirty-three weeks and six days; but probably not so long, as the above reckoning is made from the first day of February. Was this too long to wait before labour was artificially brought on, in a pelvis preternaturally small, *but not distorted?*

It must surely be admitted, that the longer this operation is delayed, the greater will be the probability, should the child be born alive, of its reaching maturity. Unless then the deviation from the size of a well-formed pelvis be very great, it would be desirable to let a fortnight or more elapse, after the seventh month of gestation is completed, before labour is artificially excited. In this very case it appears, that, when, the pain of labour came on, the pelvis was sufficiently large to admit both arms and one leg to pass through it, and yet there was still room for the head to be "*strongly wedged* in the brim." May it not then be safely inferred, that there would have been space sufficient for a child of this growth to pass, had the presentation been natural.

Suppose the operation had been performed a fortnight

earlier, would not the malposition of the child have proved an insuperable obstacle to the delivery?

To me it appears that the unfortunate event of this case is to be attributed entirely to the preternatural position, and not at all to the cause assigned, namely, the not inducing labour at an earlier period.

The propriety of bringing on premature labour in cases of distorted pelvis, seems now to be generally admitted: it becomes, then, a matter of great importance, to determine at what period of pregnancy this plan should be adopted, and whether it ought upon any occasion to be had recourse to, before seven complete calendar months, or thirty-one weeks, are elapsed.

Is there any chance of having a child born alive, and *capable of living**, before the mother has passed through thirty-one weeks of pregnancy?

If there be no such chance, is not the very principle upon which this method has been recommended broken through, by performing the operation before this period?

There can, I presume, be no doubt, that this method was proposed and adopted upon the sole principle of preserving the life of the child, with but little hazard to the mother; and as it must have been ascertained by a previous hard labour and the delivery of a mutilated child, that a full-grown fœtus could by no possibility pass alive through the distorted pelvis, it was suggested, that labour might be induced between the seventh and eighth month; at which time the child is small enough to pass through a more narrow space, and yet has advanced far enough in uterine life to be capable of living when born. But this principle is just as much set at nought, by bringing on labour before the child is capable of living, as it would be by deferring the delivery till the child has acquired such a growth as would prevent it from passing through the pelvis, till its bulk was diminished at the expence of its life.

In reference to this subject, it is proper for all practitioners of midwifery to understand exactly how they would be affected by the laws relative to the criminally procuring abortion?

Is it not an offence punishable with imprisonment and the pillory, to use means for procuring the miscarriage of a woman who has not quickened? And if she be quick with child, and the child should in consequence be dead-born, is it not a capital offence?

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* The possibility of preserving the life of the child should never be out of our minds on these occasions. It is one thing to bring a child into the world, with just life enough to cry once or twice; and another to bring it forth with a capability of continuing to live.

If so, it is clearly contrary to the law to induce labour prematurely in any case; more especially when it is known that the child cannot be born alive, or capable of living.

Suppose (no very unlikely occurrence*), a physician or surgeon to be called before a court of justice to answer for having brought on premature delivery, what is his plea? That the woman's pelvis was so much distorted, as to render the birth of a living child impossible at nine months; that therefore he had excited labour between the seventh and eighth month, to give a chance, the only chance, to the child of being born alive, and capable of living. Surely this plea would be allowed, *the distortion being satisfactorily proved;* but what becomes of this plea, if he excite the labour before the seventh month, a time at which he well knows that the child's life cannot by any possibility be preserved?

The inducement of premature labour is a practice valuable or otherwise, exactly as it is properly or improperly undertaken. In the hands of a discreet and upright Accoucheur it may be productive of much private and public benefit; in those of inexperienced or unprincipled persons, it may be converted to the worst and most disgraceful purposes. It behoves all who are engaged in obstetric practice to understand fully the principles of this method, that it may never be adopted except upon right and proper occasions; and they ought to know, what I presume few of us do, how the laws respecting the crime of procuring abortion apply to this practice in the event of an appeal to a magistrate.

One thing recommended by a very wise and good man, Dr. Denman, it is very proper to inculcate; viz. that this method should never be adopted upon the opinion or suggestion of a single individual; but that a consultation should be first held with some intelligent and respectable practitioner, in order that the character of the operator may be as much as possible secured from false aspersions or slanderous insinuations.

These observations thrown hastily together, I take the liberty of submitting to the learned and skilful Physician who communicated the case, and to the other correspondents of the *Repository.*

London, February, 1815.

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* It was publicly stated at Bow-street, a few years ago, when an atrocious business of this nature was under investigation, that the magistrates were aware of the practice of inducing premature labour in certain cases of deformity, and that they were determined to keep a very strict watch over the practice, that it might not be abused or employed for criminal purposes.

VII.

Observations on some Effects of Vaccination on the Constitution. By Thomas Cooke, Northampton, Member of the Royal College of Surgeons.

The observations of your Salisbury correspondent* on the Effects of Vaccination in relieving, modifying, or curing diseases to which the human body is subject, and which had not yielded to the usual means; as well as its antivariolous power, accord so much with my ideas and experience, that I am induced to relate, among others, one circumstance that occurred in my practice, tending to similar inferences.

On the 19th of February 1812, I delivered A. B. of a fine and apparently healthy female child; which, as usual, was left to the care of the nurse, who was directed to give it some ol. amygdalæ for the purpose of clearing its bowels of the meconium. On a subsequent visit, (the residence of my patient being some miles distant,) I was informed that the child never had any stool except when the oil was given. As it seemed in other respects perfectly well, I directed, if the oil of almonds did not answer, that castor oil should be given; but after some time, even this began to lose its effect; in consequence of which, it sometimes would not have a stool for two or three days. This induced me to change this oil for infusion of senna, rhubarb, magnesia, &c. which were ordered to be given either separately or combined, according to the effect. This plan was continued for two months, but no natural action of the bowels yet took place.

I was now convinced that this constipated state depended upon some peculiarity of the constitution, and was only to be removed by something that would affect it generally. With this view I recommended its being vaccinated. This was performed with fresh lymph; but, in consequence of its not taking, it was repeated on the 8th of May, and it went through the regular stages in a satisfactory manner. But what was still more satisfactory, very soon after the constitutional symptoms had subsided, the bowels acquired their natural action, and have remained very regular ever since, the child being now perfectly healthy. The mother has had three children since at separate births, but their bowels were perfectly natural from the first; and there is no disposition to constipation either in the father or mother.

I have not had an opportunity of ascertaining the effects of vaccination on cutaneous diseases; but I purpose putting it to

* *Vide Repository,* vol. ii. p. 204.

the test of experiment, the first opportunity that offers. To this I also feel induced, from the influence observed in France, according to the "Report upon Vaccination in France during 1811," of the vaccine inoculation on scrofula, hooping-cough, and cutaneous complaints; an abridgment of which was published last year by Dr. Baron of Gloucester.

The diseases which I shall select to experiment on, are those of an hereditary or constitutional tendency; as *Lepra*, *Psoriasis*, *Impetigo*, &c. which, I believe, may generally be so denominated when occurring in infancy.

I have often found it difficult to affect with the vaccine virus skins that are dry, rough, or scaly; and the following case not only resisted that, but also the variolous virus. On the 12th of February 1806, I vaccinated William, Elizabeth, and Sarah Dickins, three children of one family, whose ages were five, seven, and two years. The arms of William and Sarah rose, and they passed regularly through the disease; but Elizabeth's arm, which was remarkably rough and scaly, was not affected. She was therefore inoculated again from her sister Sarah; but with no better effect. It was repeated a third time, and also failed. I then advised the mother to have her inoculated with small-pox matter, as that disease prevailed here at the time; to which she consented. With this she was inoculated on the 13th of May; but this, like the former attempts, having failed, the mother with the child accompanied me to the bed-side of Joseph Simons, a boy about five years old, who had the small-pox full upon him; and I then took some virus from a fine pustule upon the back of his hand, and inserted it into her arm in three different places. This having also failed, it was thought useless to make any further attempts at this time. However, in consequence of the mother having since had five children, all of whom had at different times been vaccinated, and gone regularly through the disease, I availed myself of these occasions to subject my patient to the test of vaccination, under an idea that her constitution might in time undergo some change, and become susceptible to its influence.

In this I was mistaken, as no impression was made; for which I am unable to account, unless it be owing to that peculiar rough and dry skin she possesses. I conceive it is not possible she could have had the small-pox unknown to the mother.

This case may be regarded as singular; and it also affords some hints that may be worthy of attention in practice.

December, 1814.

*** As eruptive complaints are so apt to affect the skins of children at the age when they are most frequently submitted to vaccination; and as their insusceptibility to infec-

tion by inoculation, when such is the case, has often been observed, should it not act as a caution to the operator to be careful in examining the state of the skin, and more minutely to watch the appearance and changes in the pustule, if other eruptions appear during the stages of vaccination?

It is well known that the accession of small-pox during measles will suspend the latter, and *vice versa.* It is also asserted, that one eruptive disease has the power of modifying others. Why therefore may not that modification, if it take place, so attenuate the vaccine or any other virus, as to deteriorate the specific, and consequently to diminish the prophylactic qualities of such virus, so much as to render the patient insecure, who has been inoculated under such circumstances? To some similar cause, perhaps, many failures in vaccination, and some instances of small-pox occurring twice in the same person, is to be ascribed.—EDITORS.

VIII.

Case of Injury of the Head. By J. TOONE, Salisbury, Member of the Royal College of Surgeons.

RICHARD HARDEN, a slender delicate youth, ætat 17, a marine on board His Majesty's ship Frolic, was wounded in the head, in the act of discharging his musket through one of the ports, whilst in action with the United States' ship Wasp, October 18th, 1812. From the circumstance of nearly the whole of the crew being either killed or wounded, and there being but one medical officer on board, a minute examination of the wound at the time of its infliction was impracticable; superficial dressings therefore only were applied. On the 20th he was placed under the care of Mr. J. G. Williams, Surgeon of the Poictiers, after having been two days on board the brig, rolling deeply in a hollow sea without masts. When removed, his countenance was of an ashy hue, his eyes closed, but at intervals opened with a look of peculiar anxiety—pupils not much dilated; pulse quick and fluttering; extremities cold. He could not articulate, but moaned almost incessantly, and raised his hands to his head, expressive of pain, when the wound was disturbed.

As the dressings had not been removed since their first application, their stiffness had excited much inflammation around the wound, which was situated about the centre of the right parietal bone, of an oblong form, covered with clotted blood, and the sloughs usually attendant on gun-shot wounds. The pulsations of the brain were evident; but as the slightest attempt to ascertain the extent and nature of the wound seemed

to put him to great torture, it was deemed adviseable to defer any examination until the inflammation had subsided. Dry lint, covered by a soft poultice, was applied, and directed to be frequently renewed. Twenty ounces of blood were taken from his arm, and a laxative enema administered. Thin gruel, or sago, was ordered to be given occasionally, in small quantities.

In a few hours he appeared to be a little relieved, though the enema had produced no decided effect. He moaned less, and did not complain so much of pain at the time of removing the applications from the wound.

On the 21st, with some difficulty, a copious evacuation, *e recto*, was procured by an enema, which gave him much relief. His pulse became more distinct, and he exhibited more consciousness. The greater part of his time was passed in a dozing state, from which, however, the slightest noise aroused him. The wound had an unhealthy sloughing appearance, discharging, sparingly, a fœtid ill-conditioned pus.

22nd. Had convulsive paroxysms, resembling epilepsy, during the night, and one this morning; the severity of which seemed to be, in some measure, mitigated by the removal of the poultice, &c. from the wound. He is to-day much more susceptible of impressions from surrounding objects, perfectly understands whatever is said to him, but fails in his answers, from inability to articulate. Several large sloughs have separated from the wound, which is becoming much cleaner, and discharges a more healthy pus.

To avoid the prolixity of stating the daily progress and treatment, I shall say, in general terms, that the wound every day improved in its appearance; the youth's speech became more distinct, and he seldom complained of pain. The convulsive paroxysms returned, however, about every twelve hours; the principal cause of which was thought to be several spiculæ of bone, which, from time to time, came away on the dressings, or were removed by the forceps. His bowels were torpid, requiring the frequent exhibition of cathartics; but he seemed to take the light food allowed him with much zest.

On the 25th, the wound having become healthy in appearance, and no symptoms of irritation being present, the extent of the injury done to the bone was readily ascertained. The ball had glanced along the right os parietale, near its centre, removing a portion about an inch and a quarter in length, and one third in breadth. At the anterior angle of the wound the probe came in contact with the membranes of the brain, from which healthy granulations were sprouting; but at its posterior angle it struck upon a hard substance, which was immediately recognized as osseous. After some little time spent in ascertaining the situation of this substance, an irregular fragment of the fractured bone was extracted with the forceps;

the whole thickness of both tables about three fourths of an inch in length, and one third of an inch in breadth. This was so firmly wedged beneath the sound bone, as to require rather an extraordinary effort to disengage it. Two smaller fragments were afterwards removed, which were the only foreign bodies remaining in the wound. Profuse hæmorrhage ensued, which soon, however, subsided. He appeared much distressed during the operation, and fainted at its completion. On recovering, he fell into a sound, natural, and refreshing sleep; from which he awoke calm and easy. He expressed, in the evening, in tolerably clear accents, his gratitude for the relief he had obtained; complained of hunger, and said he should now soon be able to rise and mingle with his messmates.

From this time the progress of the wound was rapidly favourable, the youth's general health improved, and all the functions were regularly performed, though his speech continued indistinct. On the 31st of October he was removed to the naval hospital at Bermuda.

On my return to that island, from a cruise of three months, I again saw him. The wound was completely healed, and he looked the picture of health, and was able to endure (as I witnessed) considerable fatigue without material inconvenience. He complained of a slight stiffness of the muscles of the neck on the wounded side, that he felt a degree of vertigo after stooping, and that any sudden fright agitated him much; but that in every other respect he was perfectly well. A few days afterwards he was sent to England to head-quarters.

As it is not improbable that some untoward symptom may since have occurred to this youth, should this meet the eye of any of my professional brethren who may have seen the case, an account of his subsequent state might be useful.

The foregoing case will need no remarks of mine to elucidate it; I shall therefore only observe, that I think it is an additional striking instance of the truth of the opinion advanced by my respected teacher, Mr. Abernethy*, that there is great reason to believe that the brain can bear more pressure, without injury to it, than was formerly supposed.

In the present instance there was *not one well-defined* symptom of pressure present; and it is not the *least* remarkable circumstance, that such injury should be inflicted, and a foreign body of such magnitude be so long in contact with the coverings of the brain, without producing violent inflammation.

December, 1814.

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* *Surg. Obs.* vol. ii. p. 17.

PART II.

ANALYTICAL REVIEW.

I.

The Morbid Anatomy of the Brain, in Mania and Hydrophobia; with the Pathology of these Two Diseases, as collected from the Papers of the late ANDREW MARSHAL, *M.D. with an Account of some Experiments to ascertain whether the Pericardium and Ventricles of the Brain contain Water in a State of Health.* By S. SAWREY, Member of the Royal College of Surgeons of London. 8vo. pp. xxxiv—294. London. Longman and Co. 1815.

SEVERAL circumstances concur to give considerable interest to this volume. The learning, the scientific acquirements, the industry, and even the peculiarities of the author, are calculated to excite attention; but the primary object with the professional reader, will be the novelty of the views, and the originality of the opinions which it contains, conveyed in a style of impressive energy.

Mr. Sawrey, formerly assistant to Dr. Marshal in his anatomical lectures, has prefixed to this collection a biographical memoir of his friend; by which it appears that Dr. M. was born in 1742, at Park Hill, in Fifeshire. The early period of his life, and until he was approaching thirty years of age, seems to have been passed without any specifically determinate views. An early impression impelled him to follow the employment of his father, who was a farmer. But this, as it arose "merely from seeing the flocks and herds of his father, and the beautiful scenes of rural life and business," was soon relinquished for the study of the classics, for miscellaneous literature, and general science—subjects more congenial to his mind and disposition. After some years of erratic study, in which, however, he acquired considerable classical learning, a fund of general knowledge, and some reputation, he went to the continent with Lord Balgonie, the eldest son of the Earl of Leven; and on his return, about 1776, made his final election for the medical profession. In 1777 he read to the Medical Society of Edinburgh two papers, one *De Natura Caloris*, the other "on the forming

of Calculous Concretions in the Human Body." These had the reputation of being well written and ingeniously argued. At the end of 1777, he came to London, for the purpose of pursuing his medical studies; became attached to the Anatomical Theatre in Windmill Street; and in 1778 made his professional debut as surgeon to the 83d regiment of foot. In 1782 he obtained the degree of M.D. from the University of Edinburgh. His inaugural dissertation "*De tuenda salute Militum*," turns principally on the diet of the soldier.

On the disbanding of his regiment in 1783, Dr. Marshal returned to London, and was encouraged by Dr. David Pitcairn to fix in the metropolis. Among the projects suggested for his advancement among the numerous competitors which the metropolis of the British Empire always presents, the earliest seems to have been the plan of his giving a course of lectures (anatomical, and probably surgical) to the pupils of St. Bartholomew's Hospital, while three other physicians, one of whom was to have been Dr. David Pitcairn, were to complete the circle of medical science, by teaching, in the same institution, so as to form an entire school of the art. But this, for reasons now not easily ascertained, but which Dr. M. believed arose from its clashing with the interests of another establishment, was abandoned almost in its birth. In 1785 his Anatomical School in Thavies Inn was established; and he soon obtained a respectable class of pupils.

In the interval from the æra of Dr. Marshal's return to London, and his determination to fix there in 1783, to the year 1789, the great storms and vexations of his life appear to have arisen, and the foundation of his reputation to have been laid. He fell into a misunderstanding with his friend Dr. D. Pitcairn, and this was increased to an open rupture by an occurrence at the *Lyceum Medicum*, a medical society established in London in January 1785, under the auspices of John Hunter. At a meeting of this society, Dr. Marshal, who was a member, read a paper on Fever, which attracted considerable notice. This paper Dr. P. erroneously imagined was taken from the doctrines of John Hunter; and, in a moment of warmth, expressed a *wish that Dr. M. had not come to London.* That Dr. Marshal's talents, opinions, and learning were then considered to be of importance, the above occurrence, perhaps, testifies; but that his reputation had risen above mediocrity cannot be doubted, when it is shewn that he was, about this period, appointed one of a committee to correct and revise John Hunter's work, (printed at his own house in 1786,) on the Venereal Disease*.

* It is a well known fact, that the genius and talents of John Hunter had been so little, if at all, directed to literary composition,

But notwithstanding the apparent cordiality between Mr. Hunter and Dr. Marshal, and the estimation in which the talents of the latter were evidently held in 1783, when he came to express his opinions freely on a medical subject at the *Lyceum Medicum* in 1789, it gave great umbrage to Mr. Hunter, and terminated in an open quarrel. "Dr. Marshal's opinions on this occasion were rudely attacked by Mr. Hunter;" and the dispute became personal. The opinions which were thus "rudely attacked" (we use the words of Mr. Sawrey) by Mr. Hunter, related to the state of the brain in hydrophobia and mania. In both of these Dr. Marshal stated that he had found the brain morbidly altered; and he drew the conclusion, that generally this organ went into a state of disease in these affections.

This altercation influenced the rest of Dr. Marshal's life. He continued his studies; but, thus disgusted, he gave none of their results to the world, except through the medium of his lectures, which continued to the autumn of 1800, and then were declined on account of his ill health. From this period Dr. M. is only heard of as a private practitioner, in whose skill and judgment some individuals, we know, had the the most implicit confidence. On the 4th of April 1813, his dissolution took place.

That the occurrences in the life of a man of literature and science are best seen in the productions of his mind, has been often asserted. The life of Dr. Marshal gives full credence to this axiom. In its early period, in the buoyancy of youth, it was coloured by a fondness for rural scenes and occupations, and by a spirit of adventurous literature. Laborious study and profound research into medical science, marked the middle period, accompanied with a liberal desire to communicate to the public his discoveries, hypotheses, and opinions: but this commendable disposition being awed and depressed by the haughty authority of a school, the selfishness of which may, perhaps, be forgiven for the light it has thrown on physiology —he retired, about the age of 47, within himself, and opened his views and his opinions only to his pupils.

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that it became an absolute necessity to submit his productions to the revisal of literary friends, before they were presented to the public, The treatise on the Venereal Disease went through the hands of Sir George Baker, as well as the committee above noticed. At the meetings of this committee, held at his own house, Mr. Hunter always attended, says Dr. M.; and he adds, "Mr. Hunter called on me; left his card, requesting as many corrections as I could make. I spake freely but respectfully, argued against specifics, and his partiality for improper indulgencies."—p. xxi.

"The life of Dr. Marshal," says his biographer, "was that of a man of original genius, emerging, unassisted, from his native obscurity, quietly and unostentatiously maturing himself by studies and meditations unknown to the world: long hesitating in the choice of a profession; beginning late, but pursuing it, when decided upon, with all that force of mind and enthusiasm which make difficulties but the means of increased progress. At all times rather shrinking and secluding himself from public notice, than ambitious of notoriety, and yet calmly and steadily advancing to knowledge and reputation; so that he was enabled to meet the decline of life with a competence satisfying all his wishes, and with high professional respectability."

To the circumstance of Dr. Marshal's opinions having been so "rudely attacked," the profession is, probably, indebted for the posthumous appearance of the volume now before us, which is divided into four parts:—the first endeavours to shew "that water in the pericardium and ventricles of the brain, is an effect and evidence of disease:" the second treats on Canine Madness: the third is upon the Morbid Anatomy of the Brain in Mania: and the fourth contains Observations on the Nature of Maniacal Disorders.

Lower (*Tractatus de Corde*), Haller (*Physiologia*, sect. lxxx), and Hunter (*Treatise on the Blood*, p. 141) were of opinion that a certain quantity of fluid, which has acquired the appellation of *liquor pericardii*, was present in the pericardium of the most healthy animals; and it was held that a similar fluid, under like circumstances, was also found in the ventricles of the brain. The opinion of Dr. Marshal was directly contrary; for he affirms, that "in a state of health no water exists in those cavities; that nothing more than a moist vapour lubricates their surfaces; which is removed by the lymphatics as fast as that vapour forms, or is condensed into water." The first formed drop of water in the pericardium, he emphatically asserts, is the beginning of *hydrops pericardii*. But as this opinion was new, experiments were made to ascertain if the non-existence of fluid in the pericardium, and in the ventricles of the brain of animals in a state of health, was a fact. By these experiments it fully appeared, that, when healthy animals were quickly deprived of life, by cutting through the large blood-vessels, not a particle of fluid was found in the pericardium, in the ventricles of the brain, between its membranes, nor in the *theca vertebralis*. But this fact was rendered equivocal, by fluid being found in these cavities when animals, otherwise in perfect health, had died under different circumstances. It became, therefore, essential, as determining the fact of the existence or non-existence of this fluid, to shew what were the circumstances under which the exhalents might deposit a quantity of fluid in

these cavities, even while the animal was in *articulo mortis*. Dr. M. found, in animals destroyed by submersion, and in which the destruction of life was comparatively slow, that a fluid was actually found in the pericardium, and in some other cavities: but this he considered as supporting his position; and consequently, throughout the volume, water in these cavities is considered to be a morbid production.

The second part is on a subject of great importance. It contains a history of two cases of hydrophobia; an account of the appearances on dissection; with observations on the nature of the disease.

The first of these cases, both of which terminated fatally, occurred in a youth 14 years of age. He was bitten on the 27th of May, and on the 1st of June, the sixth day from the infliction of the bite, he became dejected, but stirred about the ward (in Bartholomew's Hospital) as usual. The wounds appeared sloughing, running into one sore, and the discharge was bad. An abscess formed in the palm of the hand, a redness was remarked on the fore-arm, but no distinct lines of inflammation were observed. There was pain in the hand, particularly in the bitten finger, extending from thence up the arm to the shoulder. In a few days the hand was relieved from this state, the pain remitted in the arm, and the general indisposition went off. He continued for three weeks in a state of apparent recovery, taking bark daily, with the wounds not healed, but healing.

On Wednesday, the 27th of June, a month from the bite, the symptoms of rabies began. He relapsed into a similar indisposition to that which had occurred on the 8th of June; but with new and aggravated symptoms.

"The pain arose afresh in the shoulder, extending into the armpit, and thence into the side of the breast; pain was felt in the head too, with some giddiness; the appetite for food failed, and he appeared to those about him to be very uneasy and unwell. He had an unquiet night, scarcely ever falling asleep, and when he did, he was disturbed with startings, and awoke scared. The respiration was somewhat confined and uneasy."

On Thursday, the 28th, the hydrophobic symptoms began; and in the evening of the 30th, he expired. The case is related with circumstantial minuteness, and great powers of description, but with an evident bias to mark in it a state of mental disturbance, by which it might be allied to some form or variety of mania.

The second case will be recognised as having been related in this Journal (vol. i. p. 289.) from the MS. of Mr. Parkinson. The two details mutually illustrate each other. On the 13th of April, this patient, a female, first complained of indisposition,

On the 14th, hydrophobia was evident. Early in the morning of the 17th she died. The same circumstantial minuteness of detail characterizes the description of this case; with, according to our judgment, a similar inclination to consider the mental aberration as allied to maniacal delirium.

The pathology of Rabies Canina is yet so dark and perplexing, that our readers will, possibly, not be displeased with our inserting, nearly verbatim, the appearances discovered on dissection by so able an anatomist as Dr. Marshal; and with those powers of graphical description, which we have observed to mark the whole of the volume.

On the dissection of the youth it appeared that,

"The whole cavity of the mouth, and internal fauces was superficially whiter than usual, and made wet with a whitish thin saliva, standing frothy, as if in a lather, in all the natural insterstices about the isthmus of the fauces. The membrane, lining the whole cavity of the mouth and internal fauces was unusually firm, and contracted tight around the tonsils, which stood out round, hard, white, and smooth, like two buttons;—the velum-pendulum palati was contracted in breadth, and the uvula appeared firmer and rounder than common. The passages downwards were altered somewhat in capacity, and in the structure of the parts:—the pharynx was thrown into longitudinal wrinkles, and the same appearance was found in the œsophagus. The top of the larynx was unusually open, and the epiglottis appeared a little narrower, and more peaked than usual;—the ligaments of the glottis appeared to be unusually tense. The membrane of the mouth and internal fauces, as well as the inside of the larynx, trachea, and œsophagus, were marked here and there with dark purple-like suffusions, and in some places coloured with distinct ramifications of small distended red vessels: the dark purple-like suffusions appearing also about the upper parts of the pharynx; a scarlet uniform redness over the whole tongue, at the roots of the paler papillæ. There were ramifications of red vessels about the epiglottis, and inside of the larynx;—and the inside of the trachea was coloured with vessels of a darker red. When the chest was opened we found the heart rather of an under size for the body; the anterior ventricle flat; the sinistro-posterior ventricle rounded, but unusually firm, even approaching to hardness. The ventricle was empty; and the substance of the whole heart, when cut into, was pale in colour, and, as said of the left side, unusually firm; a dark suffused spot or two appearing under the investing membrane, near the basis of the sinistro-posterior ventricle, as if from the rupture of some minute vessels in the substance of the muscle. The great vessels in the thorax appeared with the vasa vasorum as if minutely injected, and of a vermilion colour, especially the great oblique arch of the aorta. The pericardium was slightly reddened with ramifications of the vessels; the whole pleura of the left lung of the same vermilion colour, with turgid vessels. When this lung was cut into, some liquid blood of the same light red colour oozed out of its substance.

"Some adhesions, evidently the effects of a former affection about the breast, having nothing of the gloss of the surfaces mentioned, were found between left lung and ribs. Right lung was not so reddened; but the dark red appearance of the inner membrane of the trachea, descended into the bronchia, and entered into the internal surface of both lungs. No other traces of morbid alteration were noticed in the thoracic viscera. The abdomen presented no less conspicuous, and I think, somewhat similar morbid alterations. The stomach, otherwise perfectly sound in all its texture, was, however, marked in the inside with broad dark purple-like suffusions, especially about its thick end; the natural rugæ deeper than usual, and nearly empty: It also seemed to me to have taken on a morbid degree of elasticity, for on expanding the rugæ, by extending a portion of it, it returned with unusual force to its wrinkled state. The pylorus appeared like a narrow ring projecting upwards into the cavity of the stomach, with scattered ramifications of distended red vessels, in the omentum and mesentery. The inmost coat of the intestines was marked in different places with dark purple suffused spots; the intestinum iliûm was full of rugæ; and the rugæ of the villous coat of the rectum were deep and larger than common. This intestine being expanded, resisted and returned with an elasticity, like that of the stomach. Soft fœculent matter of the usual colour remained in the great intestines. The liver was of the usual healthy appearance, but the ductus cysticus was constricted and almost impervious.

"The tunica propria of the kidneys was coloured with numerous ramifications of blood-vessels, containing a blackish blood; their substance was whitish, and in the infundibula a whitish gruel-like fluid was found. The bladder was contracted, quite empty, and marked in some places with dark suffused spots. The urethra being divided at the membranous part, was contracted to the size of a corking pin. Last of all the head was opened; and the following appearances were observed: An unusual moisture and lubricity between dura mater and arachnoidea; and the pia matral vessels appeared more numerous, blacker, and more distended than is usual in health. When the substance of the brain was sliced off, not only were numerous reddish points left on the cut surfaces, but in a few seconds dark-coloured blood issued copiously from the cut vessels, and each point was converted into a broad blot of dark brown blood. The substance of the brain was in a small degree firmer than a healthy brain is; the ventricles of the brain contained a quantity of water, though they were not distended with it, and on its being let out, the fine membrane lining the ventricles was seen marked with ramifications of vessels, turgid with dark-coloured blood."

The dissection of the second case was made by Sir Wm. Blizard; about twenty-nine hours after death, and before any visible putrefactive change had taken place.

"The head was first opened, and the following morbid alterations appeared. The dura mater, instead of having the healthy colour, was of a dark hue; the larger branches of its arteries, which

in health are the only red arteries visible, were tense and turgid, with livid liquid blood; and the smaller branches, which are usually colourless, were filled, as if strongly injected, with blood of the same colour; the veins were distended with the same kind of blood. As a membrane, it was unusually dark coloured from being overloaded with blood; and being lacerated in one place in the separation, upwards of a tea-spoonful of the same livid-coloured blood was shed on the outside of it. There was water between the dura mater and tunica arachnoidea, so copious that when the brain was drawn aside against the lower part of the skull, it collected in a considerable quantity between the brain and dura mater, at the edge of the divided skull. Water was also evident between the tunica arachnoidea and pia mater, for the cellular membrane which connects the two was swollen with it.—There was also water between the pia mater and brain.—When the brain was cut off in slices, the surfaces shewed numerous brown points, which quickly spread into as many blots of the same colour, larger than any I had ever seen in any brain before. Both lateral ventricles were distended with a straw-coloured fluid; and the same kind of fluid was found in the other ventricles, with a watery appearance of the plexus choroides. The basis of the brain presented an appearance altogether new to me. The four arteries of the brain were tense, and filled with the same kind of livid brown blood, and all their branches in the pia mater were much distended with the same kind of blood. In the neck the jugular veins were unusually small, but very tense and full; the carotid arteries were also tense and small. In the thorax, the heart was found situated unusully erect; left side unusually firm, and containing some liquid, dark, brown blood; right side of the heart flaccid and empty.—The oblique arch of the aorta smaller than usual, and contained a florid coagulum. The whole membrane lining the larynx was marked with dark red suffusions; and the membrane of trachea downwards into the lungs was of an uniform red colour. The surface of lungs or pleura was of a dark red colour, with numerous suffused patches of a more florid appearance. Dark patches, or suffusions of a dark colour, appeared on the inside of the stomach, and here and there in the small intestines. Stomach empty, and firm in its texture. Pylorus unusually projecting into the cavity of the duodenum. The contents of the pelvis were coloured with uniform suffusions, or purple-coloured ramifications of turgid blood-vessels.—Bladder of urine was marked inside with dark suffusions, and almost empty."

In the fourth chapter of this part (the second of the work) Dr. Marshal takes a comparative view of these cases. He observes that in each there were three successive stages, corresponding in some degree to each other, and agreeing exactly with respect to succession, though not with regard to the length of the periods. It is probable, he further observes, that these three states are common to all cases of hydrophobia; and it is of importance, he believed, to mark and compare them; because this will not only help to point out the periods during which pro-

phylactics ought to be tried, but also two distinct stages of the malady in which different remedies ought to be had recourse to, with a view of accomplishing a cure.

"The first state to be noticed was a period of health, an interval of suspence, which was passed between the application of the poison and its effects upon the system. The second state to be marked was the *first stage* of the disease, beginning with a local affection accompanied with a general irritation of the heart and arteries. The third state, which was the *second and last stage* of the malady, is a state of madness, beginning when the functions of the brain become particularly affected, and soon ending in death."

In following up this "comparative view," the author manifests extraordinary descriptive powers, shews himself to be a learned and scientific observer, but under the influence of an hypothesis, viz. that hydrophobia, or rabies rather, is a form of insania; which, however, if an hypothesis, he ably contends is founded on the veracity of natural phenomena.

There was a remarkable coincidence in the symptom in each of the patients.

"The lad's indisposition began with pain up the arm, head-ache, and some increased frequency of pulse; and after the intermission noticed above, the pain arose afresh about the shoulder, extending into the arm-pit and into the side. The attack on the young woman was, in like manner, marked with head-ache, pain up the arm, and what was called feverishness. The lad said he could feel a slight confinement of respiration, referred to the lower part of the breast; the young woman complained of the same thing, though later in the disease. In both, the pulse soon became frequent, and was gradually accelerated, till at the latter end of this stage, it was impossible to count the minute motions of the artery. In both, the tongue remained free from foulness, though at times, more or less whitish, and slightly dryer than is usual; the mouth in both, towards the end of this stage, (the first of the disease,) filling with a ropy mucus, and an unusual quantity of saliva. Neither expressed any loathing of food; both seemed capable of taking food, so far as appetite was concerned; but the degree of the appetite for food was not expressed. Nor was there any febrile prostration of strength; for both could sit, stand, walk, lie down and rise up, without complaining of inability. Constipation of the belly seemed to take place in both, and both made but little urine. The countenance of both was serious and dejected, the pupils a little dilated; both were awake night and day, or had only short and unquiet sleep. Both were inattentive to present objects, appearing to be absorbed in their own mental suffering; yet when called to attend, both were capable of attention. The difficulty of swallowing, which it would seem, has always engrossed the attention of observers, though it is not the most formidable of the symptoms, was of the same nature in both; yet differing in degree, and in some accidental circumstances. Both were some time ill, before they experienced this difficulty. When

it arose, both could swallow soft or solid food, more easily than liquids. In both it gradually increased, to such a degree, that the attempt became almost fatal, and threw the whole frame into the most violent agitations.

"Favourable moments occurred, when both could swallow; and throughout the whole disease, both could swallow solid substances, in the form of pills. Some differences of this symptom were observable in the two patients, and they seemed to result from a difference of age and sex. The lad experienced the difficulty, and sometimes the impossibility, of swallowing, only when he tried to force the morsel down into the pharynx. The young woman experienced the difficulty the moment she intended to swallow. Before the cup touched the lip, provided it was carried towards the mouth, while she intended swallowing, she was almost choaked, and went off in violent agitations. While both dreaded, and sometimes absolutely refused to swallow, it seemed a clear fact, that neither of them had any dread of water. Both could look on water, and other liquids, with indifference. The lad was highly gratified by the application of cold water to moisten his tongue. The dread was of the act of deglutition, not of the liquor, considered either in its appearance, nature, or effects."

Toward the end of the first stage of the disease, the powers of sense began to be altered and disordered in both; an exquisite sensibility arose in the skin, particularly to the slightest contact of water. The looks of both kindled, the eyes turning unusually vivid; imagination, as appeared from broken hints expressed by them, was beginning to be at work, and certain internal feelings to be higher. Thus did the disease slide insensibly into the second stage, when it put on a new and far more formidable appearance. The patients, then falling into a momentary slumber, appeared to be led by their dreams into deep horror; they awaked scared, mistaking the place they were in, their own situation, and the persons about them. The horrors that followed, no pen has before so lively depicted: and whether the scene has been heightened by the desire of the author to establish a particular opinion, or is but a glowing representation of what has been tamely described by other writers, it demands attention.

"The raving madness, which immediately ensued, was characterized by horror, terror, and agonizing pain; for the imaginary situations they were led into were more dismal, the objects presented more terrible, the cruelties inflicted on them more torturing, and all in swifter alternations and succession, than ever occur to sound sense in real life. The rapid succession of ideas was truly astonishing, and each was attended by exertions which threatened the destruction of the muscular fibres: temporary reliefs seemed to be interposed, by their being snatched at intervals, into situations solemn or cheerful, and presented with objects interesting, instead of terrible; or made spectators of cruelty, instead of sufferers of it,

Thus were they enabled to support, for some time, a state of suffering, too agonizing for human nature long to sustain. The madness of the lad, who had been a sensible boy, was in a loftier tone, and more shrieking, and it was remarkable, that the ideal dangers and horrors he was involved in, were precisely such dangers and horrors as a lad of his situation in life could have been acquainted with, or had hints of before. He endured the sufferings and conflicts of this last stage about nine hours, and died exhausted with agonies of pain and great muscular exertions of strength. The dangers of the young woman which she had to struggle with, and the horrors that enclosed her, were what in her life before she had principally feared and shunned. She bore these new sufferings about fourteen hours, and expired over-powered with pain and excessive exertions. The spectators of the madness, in both, could not follow them through all their fancies of horrors and dangers; the transitions were so rapid that they seemed to us to be in several places at once; but though they expressed only hints of what they were encountering or engaged in, it is probable that all the dismal scenes through which they were hurried, and the dangers they underwent, were successive and somewhat connected. In short, the lad in nine hours, and the young woman in fourteen hours, seemed to experience a great deal of whatever had formerly interested them, and suffered whatever they had formerly dreaded.

"Fury, a symptom recorded by former observers of this disease, and placed in the close of it, had no place in the dreadful madness in the cases recited. There was horror, there was terror, but no fury; the exertions were to escape fancied danger, not to repel it; neither anger nor revenge seemed to operate. If they ever attempted to bite, it was not from a propensity to do injury and give pain, but it was done in the way of overcoming the restraint of waistcoat cords, or the nurse's strong wrists, which held them down in bed, and which in their diseased imaginations seemed to be keeping them in danger; and once or twice, having no other way of breaking the entanglement, they seemed ready to bite what confined them, when it came near their mouths. If they had been excited to rage or fury, their misery would have been less; but they thought they were in danger, of which they were horribly afraid, and cruelly treated, without any desire of revenge. About the close of the scene, when all sense and intention were beginning to be effaced, some irregular twitchings and feeble jerks of some of the muscles occurred. These were all the convulsions that took place."

So well convinced was Dr. Marshal that hydrophobic patients became insane in an high and unusual degree; and that the insanity arose at the latter end of the disease, as the difficulty of swallowing, and other symptoms, did in the former part of its progress, that he observes, to waste a moment in proving it would be absurd. Whether, however, this will appear quite so clearly to others, may be questioned; and while the brilliancy of the author's talents are allowed, his conclusions may be rejected.

From the phenomena of these two cases, and from the dissections, Dr. M. undertakes to give a Pathology of Hydrophobia. To the value of such a pathological view of a universally destructive disease (we fear no evidence of the contrary has yet been produced), from the pen of so able an anatomist and physiologist as the author of this volume was known to have been, we readily subscribe. But to what degree he has succeeded in explaining the modus operandi of the rabid poison, the rationale of the symptoms, and the immediate cause of the constantly fatal termination, we shall leave with the judgment of our readers.

It is assumed, and we believe mostly admitted, that the cause of *Rabies* is a poison applied by the mouth of a rabid animal, which lies dormant in the bitten part during the previous period of impending danger. This period terminating, the poison begins to act, producing irritation, which is sometimes not inconsiderable (vide the first case here related) in the ultimate arteries of the part to which it was applied, and extending to the surrounding skin and cellular membrane. About this time the heart begins to be affected with a corresponding irritation, manifested by an acceleration of its actions; and the irritation spreads to the whole arterial system. A general compression or diminution of capacity of the muscular system accompanies this irritation. "The heart, large arteries, and veins become permanently smaller in size." The dissections, as well as the symptoms in the two cases upon which all the data are founded, "evinced that the capacity of the sanguiferous system was diminished; the heart in both being found unusually contracted and hard, the great arteries diminished in capacity, and the great veins of the neck so small as to be taken for arteries, in point of size."

"The morbid condition and action of the sanguiferous system, produced a repletion and turgescence both in the coloured and colourless small vessels; and the dissection shewed this repletion, and especially in the smaller branches of the small circles of the blood near the heart; for, in both, we found arteriolæ and venulæ arteriarum, turgid, with blood; the pleura coloured with turgid red vessels; the membrane which lines the trachea, and its whole ramifications within the lungs, coloured deep with turgid red vessels. The same repletion of blood, forced into small blood-vessels, appeared in the stomach; particularly about the cardia, where the vessels are particularly numerous, and veins large; also patches of the same kind of fulness where found in the intestines; and patches of vessels, distended with blood, were also found in the bladder of the urine, and in some places, a dark central spot, indicated that rupture had taken place in some of the small vessels of this part."

The morbid contraction which pervaded the sanguiferous

system, extended to the whole of the membranous structure of the body; it was seen in the lungs, in the stomach, in the intestines, and particularly in the rectum of the female, by which the exhibition of enemas was excluded. The urinary bladder was likewise contracted. One general effect of this state of the body, was a considerable suppression of wonted secretions. The mouth was dry, but not foul; the intestines were inactive, and probably dry; the urine was small in quantity; and what moisture was on the skin was scanty and unusually liquid. The effect produced on the throat by this general membranous contraction, forms a striking feature of the disease; and as the rationale of it has, probably, never before been so well explained, we present our readers with the passage, in which that explanation is contained, in the clear and characteristic language of the author.

"Before attempting to explain the state of the hydrophobiac's throat, it is necessary first to recollect what takes place in deglutition performed by a healthy throat.—When we swallow, provided it is done in the ordinary way, the masticated morsel is laid on the tongue and carried back to its root; in this position it bears on the epiglottis, tending to lay it down on the top of the larynx; with a jerk, the os hyoides and parts connected with it below, are pulled up and forward, whereby the epiglottis, applied for a moment to the top of larynx, is pulled forwards *from under* the morsel, and the pharynx being elevated at the same time receives it; while the muscles of the isthmus on each side by their co-operating contraction force it back, and prevent its coming forward with the ascending root of the tongue; and the velum pendulum palati being drawn backwards and upwards, close against the posterior nostrils, prevents its rising into the nose. The pharynx, in this jerk up, is dilated to receive it; but no sooner does it enter the opening of the pharynx, which is now in a line with the os hyoides, than the pharynx contracts, and forces the morsel down into the stomach. This complicated action is done in an instant, because, were the morsel to lie on the epiglottis longer than an instant, it would too long preclude the entrance of the air into the larynx, the epiglottis being in this step of the business laid down flat on the top of the larynx.—Also, during the instant of the top of the larynx being closed, the glottis, which has its ligaments pulled tense by the elevation of the thyroid cartilage, is contracted; so that should any particle of food, or drop of liquid insinuate itself into larynx, at the sides of the epiglottis, it is prevented from descending lower than the glottis. Such, we shall suppose, is nearly the healthy function of deglutition. When deglutition comes to be performed by such a state of parts as has been noticed in the disease in question, it is experienced to be impracticable, and the attempt is dangerous. Every time the larynx is elevated for swallowing, the glottis is violently contracted, precluding the air too long, while the mouth of the pharynx shuts against the morsel. The person is thrown into instant agitations,

just as if seized by the throat; for not only does he experience sudden strangling, but an insurmountable obstacle in the pharynx.

" As in a healthy state of the throat, it requires a quicker jerk of the larynx upwards, and a more accurate co-operation of all the parts concerned, when we swallow liquids, than when solid food is swallowed; so in this disease, it is far more difficult to swallow liquids, than it is to attempt solids. The preclusion of the air lasts longer, and occasions proportionally greater disorder.

" The danger and difficulty of taking down food into the œsophagus, especially when liquids were attempted to be swallowed, were increased, it is probable, by the morbid scantiness of parts, whose office is to shut up every passage, excepting that into the throat, when food or drink is received into the pharynx. The epiglottis, which should serve as an ample lid to the open top of the larynx, was found unusually peaked in the lad, and folded a little lengthwise in the middle; whereby an opening on each side, probably might admit, in the act of swallowing, some particles of drink or food into the cavity of the larynx, which would augment the agitations. No measurement was taken of the velum pendulum; so that I know not whether it remained ample enough, to stop up the posterior nostrils.

" Where the disease forms in a throat peculiarly susceptible of morbid contractions, the obstacle and danger are more instantaneous and alarming. The stoppage of respiration anticipates the attempt to swallow. Before the cup or food reaches the lips, at the very idea of swallowing, the irregular action of the muscles begins, and the agitations are produced.

" It would seem, that the muscles of deglutition are not particularly in fault; they are affected, in consequence of the hydrophobian paroxysm, but do not form it; the person can open his mouth wide, speak, vary the tone of his voice, and shift the morsel or drink from place to place in the mouth, actions performed by the same muscles, which are employed in deglutition. What also evinces, that the muscles, which perform deglutition, are not in fault, is, that the person can swallow without difficulty, provided the violent obstacle in the glottis be avoided; which happens, when the morsel is swallowed in a particular way;—when it is dropped into the pharynx, without an elevation of the thyroid cartilage. In this way, the elevation of the larynx is eluded; which is the cause of the difficulty. The patient soon learns this easier way: when he must swallow, he takes the morsel in his own hand, and holding it between finger and thumb, carries it back past the root of the tongue, and drops it into the mouth of the pharynx; the contraction of which, backed by its long muscles, immediately forces it down. Of all solid substances, accordingly, pills are the easiest to swallow; they may be thrown back from about the root of the tongue, at once into the pharynx, without any necessity to elevate the larynx, or contracting the isthmus of the throat."

The lessened capacity of the sanguiferous system, and the general morbid contraction of the membranous structure, was

accompanied, in the first stage of the disease, with an irregularly increased sensibility of the skin. In the second stage, the arteries of the head were far more irritated than any other arteries of the body; and the functions of the brain became affected with a corresponding violence. Under this condition of the brain, all the oblong muscles were thrown into convulsions, and maniacal force was exerted*.

The third part treats of the *Morbid Anatomy of Mania.* The object is to shew, that a disorganization of the brain generally occurs in mania, and that the seat of the disease is in that organ.

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* Mr. Sawrey, the Editor, in an Appendix to this part of the volume, has given a case of hydrophobia, with the morbid appearances discovered on dissection. A state of the brain similar to what was seen in Dr. Marshal's cases was found. This, with the preceding cases taken together, Mr. Sawrey thinks, "*form a tolerably strong chain of evidence respecting the disease affecting the brain.*"

The importance of the facts here stated, both as leading to a true pathological understanding of the nature of this disease, and as indicating a rational method of cure, entitle them to the support of all the authentic collateral evidence that can be procured. Under this impression, we extract from a pamphlet on Hydrophobia the following account, by Mr. Copeland, of the appearances observed in the dissection of a man who died rabid in December 1812.

"The surface of the whole intestinal canal, but particularly of the small intestines, exhibited evident marks of inflammation. When the stomach was opened, there was the appearance of unusual vascular action; but in three or four spots, about the size of a sixpence, the internal coat of the stomach was of a brown, approaching to a black colour: and it was evident that these spots had undergone a very material change of structure, that they were in a state of sphacelation. When the larynx, pharynx, and part of the tongue were taken out for more accurate examination, the epiglottis presented itself with its membrane very highly injected with red blood, as also the membrane covering the constrictor muscles of the pharynx; and generally the whole of the larynx was much inflamed. The vessels of the dura mater and pia mater were turgid; and the lateral ventricles contained about four ounces of fluid: but the principal appearance of inflammation in the brain was at the base, near the crura cerebri, the tuberculum annulare, and the origin of the eighth pair of nerves; the pia mater was here considerably more vascular than in any other part, and there was also much fluid effused under it. A particular red appearance of the part, where the wound had been inflicted, was observed before death; but nothing could be detected on inspection, except that a considerable branch of the cutaneous nerve was traced to the wound. This nerve was laid bare for some distance; but no inflammation or change of appearance was manifest."— *Cases of Hydrophobia, with Observations on the Nature and Seat of the Disease, by J. O'Donnel, M.D. 8vo. Lond.*

In twenty-two cases of persons who died insane, Dr. Marshal examined the brain *post mortem.* A detailed account of the dissection in each is given; but we have not room to go beyond the general results. In every case, water, generally in considerable quantity, was found in the ventricles, and often between the membranes of the brain. In sixteen cases, the substance of the brain was preternaturally hard or tenacious; sometimes the nerves were flattened like tape, and much indurated. In eleven cases there was congestion of blood in the sanguiferous vessels. In some instances there was incipient ossification of these vessels, and the external contour of the cranium occasionally deviated from the accustomed standard of form.

For this suite of dissections of the brain of patients who have died under the immediate influence of the maniacal state, and made unquestionably with skill and care by so able an artist, the profession must feel indebted. But the object of the author was not merely to describe the actual state of disorganization of the brain in cases of mania: he was much occupied in considering the theory of that disease; and in the following portion of the volume, making the fourth part, his opinions, reasonings, and conclusions on this subject, are contained.

The first chapter of this part consists of an elaborate essay on the functions of the brain and nerves, compiled by the Editor, from papers left in an unarranged state by Dr. Marshal. Although we are far from denying to this preliminary chapter considerable merit as a composition; comprehensive and even profound views of the subject, as regards its relations, bearings, and dependencies, accompanied with much ingenious illustration; we must, having already given so much space to the preceding part, deny ourselves the satisfaction of going minutely into it. The subject is obscure and perplexing, and is yet seen but "through a glass darkly." To be fully understood, the chain of reasoning should be followed in the Essay itself; and we believe those readers who do not agree to all its conclusions, or admit all its principles, will hardly consider their time to have been misemployed in the perusal.

In the second chapter of this part, the *proximate cause of mania* is inquired into. After the perusal of the preceding chapter, the reader will come prepared, perhaps, to believe with Dr. Marshal, that "in all cases of derangement of the intellectual powers, there will be an actual disease in the organ from which these powers proceed." It is hardly to be doubted, but some violent morbid effect must have been produced on the corporeal structure by that diseased condition of the brain,

which was found in the whole of the twenty-two cases examined by Dr. Marshal; the results of which have been just given. Whether that morbid effect, however, would shew itself in stupor or convulsions only, or in the intellectual aberrations constituting mania, could scarcely be determinable *a priori*. The author has proved, that in these instances mania was the uniform result. A short history of the previous disease accompanies every examination *post mortem*. That the morbid change observed in those brains which fell under the inspection of Dr. Marshal, was the immediate product of diseased vascular action, we have little difficulty in comprehending; but why the disease consequent upon this change, and arising from morbid vascular action, should have been mania rather than idiotism, stupor, or convulsions, we do not so readily understand. Nor is the dilemma removed by the assertion, "*that it is the maniacal mode of action in the vessels of the brain which constitutes the proximate cause*" of mania. The commentary, that "in the insane action of the vessels of the brain, there appears to be something different from mere increased action; the mode of action seems to be changed," is not more explicit and satisfactory. That in many cases of mania the brain is altered in its organization, is deluged with aqueous fluid, or is oppressed with accumulations of blood, is quite certain. It is equally certain, that these morbid conditions of the brain often occur without mania being the result. All this is well known; but we require also to know, before the mind can rest at ease on the subject, what this "*maniacal mode of action*" in the vessels of the brain is? What are the appearances in the brain which shew this specific action to have existed; or what are the phenomena which indicate or distinguish it in the living state? Until more, much more is known, the proximate cause of mania will elude the grasp of the pathologist.

That in all cases of intellectual derangement there will be an actual disease in the organ whence intellect proceeds, has somewhat the air of a self-evident proposition. But it is a fact, that in numerous instances of mania, no mark of disease in the brain can be discovered; and so frequently does this happen, that the author, in a distinct chapter, (the third of part iv.) endeavours to account for, or perhaps explain, away this phenomenon. But we must regret, that the confusing fact of the existence of mania without any visible alteration in the structure of the brain, and also under such changes in that organ as indicate it to have been subjected to the operation of violent morbid actions, remains yet unexplained and incomprehensible.

The fourth, the fifth, and the sixth chapters, with which the volume concludes, are little more than indications of what Dr. Marshal might possibly have expanded into valuable dissertations, had not his energies been depressed by the circumstance noticed in the former part of this article, and his productions left to the fate of posthumous publication. They treat on the predisponent and exciting causes of mania, on its varieties, and on the maniacal character, deportment, and ravings.

The predisposition to mania, or, as Dr. Marshal was accustomed to express it, the aptitude, liability, or susceptibility to this disease, depends, in a measure, on a peculiar irritability of the cerebral arteries; which is itself founded in some malformation of the heart; for it is here observed, "that deformed persons most frequently become insane; and generally such have ill-formed and diseased hearts." But the most palpable predisponent cause is said to arise out of the form of the cranium. In those who have a strong aptitude to insanity, "the skull is small, and too flat at the sides; the forehead is often narrow and prominent forwards. The fossæ in the basis of the skull are also often too small; not leaving sufficient room for the basis of the brain and origin of the nerves." The exciting causes are numerous, and have little ambiguity. Excess of every kind, the turbulence of anger, the haughtiness of pride, the fervor of love and the pain of jealousy, the depression of grief, and the apprehension of religious reprobation, have each, where the predisposition has been strong, produced the disease. The varieties of mania, and the maniacal character, are as multifarious as the individuals affected.

"The confines of mania, and soundness of mind, are hardly to be determined. It is, perhaps, impossible to say where the one begins and the other ends. Yet it is evident that there is a great number of insane characters at large in society, and even without doing harm. For, even most of the insane have a susceptibility of heart and love of life. Hence they are influenced by the known habits of society, and are somewhat kept in check by the threats of the law. However, such persons are so far dangerous, that they are always liable to become more violently affected upon the occurrence of a fresh exciting cause."

Influenced, possibly, by the voice of rumour, we took up this volume with the lively expectation of meeting in it much original physiological information, profound pathological views, and improved methods of cure, resting on principles resulting from a more than usual accuracy of investigation, joined with the perfection of learned research: and if the reality has not risen to a level with the expectation, we must acknowledge having received from it both gratification and instruction.

II.

Observations on the Animal Œconomy. 8vo. pp. 163. Callow. London, 1815.

To give a general view of the functions of animal life—to elucidate the principles, the properties, and the powers of vitality—or even to epitomize, explain, and arrange the opinions, the hypotheses, and the theories which have been entertained and supported by the multitudes who have attempted to draw this Ulyssean bow—is a design not easily accomplished: nor possibly would it ever be undertaken, were it not for the gratification that every step in the exploration affords. *Labor ipse voluptas.* In the volume before us, the author, Dr. Blagden, pursuing his object *con amore*, has collected, into a thin octavo, facts and opinions widely scattered through the fields of medical literature and philosophical science; and has concentrated elaborate systems and complex investigations under distinct heads, in a manner that cannot fail to assist those who follow in the same route. He advances no new theories, modestly disclaims all pretensions to originality, and asks for nothing beyond some novelty in his manner of considering the opinions of others.

The "Observations" open with a view of the "Theories of Nervous Action*," which is introductory to a particular account of the senses of touch, taste, smell, hearing, and vision; a history of opinions on muscular motion—of the phenomena of sleep—of the circulatory system—of respiration—of secretion—of digestion—of nutrition—and of generation.

The phenomena of nervous action have been explained, or an effort has been made to explain them, on two hypotheses, differing much from each other. The circulation of an extremely subtile fluid is the basis of one: a vibratory motion of the nerves that of the other. The first assumes, that a species of fluid matter, of extreme tenuity and exquisitely subtile, exists in the brain and nerves, or is secreted in the brain, and transmitted by the nerves to all parts of the frame, carrying with it the power of seeing, tasting, feeling, &c. But it is not sufficient to explain the phenomena, that this subtile fluid is transmitted; something must be returned to the common sensorium, to give the perception of what is seen, felt, or tasted. A flux and reflux seemed to remove this defect. The opinions respecting the nature, qualities, and *modus operandi* of the nervous fluid are stated; the arguments which support each are

* By "nervous action," the author says he means "that condition or state of the nerves on which their functions depend."

examined at considerable extent, and the doctrines grounded on it are fully detailed.

The second hypothesis, that of nervous vibration, as being liable to all the objections applicable to the doctrine of a nervous fluid, and to many additional ones, occupies a comparatively small portion of this part of the volume. The insupreable objections to this hypothesis, we cite, because they are comprized in a short paragraph.

"Vibrations, which ought to extend through the whole length of the nerves, and to continue as long as sensation, could only take place in bodies extremely elastic, and by no means in a substance so soft and pulpy as that which composes the brain and nerves. It is hardly possible to imagine any species of matter, less adapted for a vibratory motion, than this medullary substance, which recedes on the slightest touch, and retains any form which is given to it by external pressure. The extremities of the nerves, in which the sensibility is greatest, are the most pulpy, and of course less susceptible of a vibratory motion, than even the other parts of the same system. The vibrations must be most considerable in those cases, where the substance of the brain and nerves is most firm, and of course sensibility and irritability must also be in the same proportion increased; therefore sensibility and irritability ought to be greatest in old age, least of all in infancy, less in the female than the male sex, and universally these would exist in greatest degree, as the rigidity of the simple solid was greater—directly contrary to well known facts. The greater number of nerves have ganglions and plexuses interspersed throughout their course; both of these must interrupt the vibrations; the first, by opposing an obstacle of a firmer consistence than the nerves themselves; the latter, by dissipating the oscillatory movements among a multitude of smaller ramifications of the nerves. The nerves are not sufficiently fixed at their extremities, to afford a point of support."

The difficulty of conceiving a fluid of such tenuity as not to be visible to the eye, however assisted by glasses, and which must yet be confined within tubes formed of soft and pulpy animal matter, and having also a motion of incredible celerity, running, as some have imagined, at the rate of a hundred thousand miles in a second of time, almost forbid the belief of its existence; and the still more difficult conception of vibrations in soft and loose cords, so exquisitely tremulous as to convey, with sudden velocity and certain precision, every degree and quality of sensation, and every possible variety of mental impression, bring both these hypotheses into dilemmas which seem to have but a shade of difference, as regards their being founded in truth. The theory adopted by Haller, that the vibratory motion was not in the nerve, but in the nervous fluid, does not remove, in any measure, the obscurities of the subject. The doubts which consequently do, and, perhaps, ever will, exist upon the doctrines of "Nervous Action," are not decreased by

the view the author takes of the subject. It is much easier to demolish visionary hypothesis, than to erect rational theory.

The concluding part of this chapter, giving a compressed historical view of the theories of vitality, will present no unfavourable specimen of the author's manner, and afford some information to our readers.

"The speculatists on the cause of life may be divided into three principal classes—those who refer it to an immaterial principle—those who imagine something distinct from the immaterial soul, and separate from the body—lastly, the Materialists. The first class may be again distinguished into—first, the Stahlian school, who believe that all the functions of the living system are produced by the rational soul, judging what is most conducive to the health and safety of the whole; in other words, that the vital and natural functions are occasioned by the agency of the *will*, with a view to some determinate end and design, like those actions which are usually denominated voluntary.—Secondly, others, who do not attribute the actions in question to the will, but to the soul or immaterial principle, acting in some unknown manner. These imagine, that all the actions of the system are owing to the same cause; operating differently. This mode of considering the subject, Whytt, and perhaps Cullen, have adopted, with some who are intermediate between this opinion and that of Stahl.

"The Vitalists acknowledge an immaterial substance as the cause of the phœnomena of mind, but do not attribute to it the production of the vital and natural motions. These they account for by supposing, that there is in the system either a peculiar substance distinct both from mind and body—of the nature of it, there is no agreement. Many suppose it to be only a finer species of matter; and others, something distinct and intermediate between mind and matter. Others are of opinion, that the vital functions are merely the result of organization, and not of any distinct principle; yet, admitting an immaterial substance as the source of thought, they are not to be ranked among the Materialists. This last class consider the body as constituting the whole of the animal—thought and sensation, as well as the involuntary motions, being only modifications of the organs. Even amongst this class, however, a diversity of sentiment is to be recognized: whilst some conceive organization to be the only source of the functions in question, others are disposed to refer the phœnomena to some unknown modifications of matter, independent of structure, or any arrangement of parts."

In the portion of this volume, which treats, in distinct chapters, of the senses, and various functions of the frame, much physiological information is given, and many passages might be extracted, both instructive and amusing; but the limits of our Journal forbid. Under this circumstance we shall be satisfied with recommending the work to the perusal of the junior branches of the faculty, especially those who have not

access to large libraries. The author has read with attention, and collected with industry: he has given an entertaining lecture on the functions of animal life; and his criticisms on the opinions which come under observation, will excite the reader to examine for himself, and will often assist him to form, as far as the subject is yet understood, a clear judgment of the theories which have existed or do now exist.

III.

A Statement of the early symptoms which lead to the Disease termed Water in the Brain, with Observations on the necessity of a watchful attention to them, and on the fatal consequences of their neglect; in a letter to MARTIN WALL, *Esq. M. D. &c. &c.* By G. D. YEATS, M. D. of Trinity College, Oxford, of the Royal College of Physicians, London, &c. &c. 8vo. pp. 114. Callow. London, 1815.

IF modern medical science deserved no other meed, it is justly entitled to that which it may claim for the improvement of the pathology and treatment of the formidable disease, which forms the subject of Dr. Yeats' inquiries, in the letter now under consideration.

Our author justly regards an accurate knowledge of the antecedent and early symptoms of this disease of more importance than the most intimate acquaintance with the diagnostic features of its more perfectly formed state; on account of parents and even practitioners being lulled into a fatal security, "not only from the equivocal nature of these symptoms, but from their being frequently common to other diseases;" and also on account of the disease being easily arrested by medicine in its approach; whereas many cases have contributed to prove the uncertainty, if not the total inefficiency of art, for averting its fatal issue after it is fully formed. He confines his remarks chiefly to children from two to twelve years of age, although he admits the appearance of the disease both in maturer age, and also in the period of infancy. The majority of the cases which we have seen, have been in children under two years of age, while at the same time we have met with a few in young boys above twelve years; and, therefore, from our own experience we should be inclined to fix the interval between one and fifteen, as the period in which water in the brain most commonly occurs.

Dr. Yeats makes some excellent remarks on the importance of attending to what he terms "the medical geography of the countenance;" but which we would denominate the physio-

nomy of pain, particularly in those who are unable to detail their symptoms. He adopts Dr. Carmichael Smyth's term hydrencephalus, from its evident propriety; but dissents from many of the other opinions of that author; and descants on the dangerous tendency of confining the attention solely to the state of the brain, and considering the disease as one "of the head only, beginning and ending there;" and even, although, he quotes with approbation the opinion of Dr. Cheyne, that a physician ought never to hear a child complain of head-ache without "procuring the history previous to this complaint, and comparing it with every ambiguous symptom;" yet, he conceives the alarm should be sooner taken; and the consequences "of a diseased state of the digestive organs upon the brain, before any pain is complained of there," kept in view; a circumstance, which a most distressing experience has convinced us is of the most vital importance. Dr. Yeats also properly conceives, that many of the errors of authors who have treated of this disease since Dr. Whytt's work appeared, have arisen "from misunderstanding the causes of the symptoms, which the discovery of water, by dissection, tended to confirm;" and regards it as an entire assumption, that the earlier symptoms described by Dr. Whytt, "arise from the deposition of water in the ventricles."

Our author divides the causes producing water in the brain into external and internal. Under the former, he ranks "insolation and mechanical violences, and motion of every kind, which would increase vascular action in the brain, and directly cause disease, giving rise to effusion;" but he regards these as comparatively rare causes of the disease. Blows on the head, however, he conceives, may frequently happen to children, and be concealed by servants; but even in these cases he is of opinion, that, often, the diseased impression on the liver and digestive organs, produced by the blow, lays the foundation of the complaint. In this opinion we cannot altogether concur; for although we admit that, in the majority of cases of hydrocephalus, the affection of the brain is secondary, and depending on a primary diseased state of the digestive organs; yet we can conceive the possibility of that state of the brain which fits it for the formation of water in the ventricles being at once excited, particularly in the predisposed, by a blow on the head. Under internal causes he ranks every disease of the stomach and abdominal viscera, especially the liver, which can excite an increased vascular action of the brain.

Having taken the above view of the subject, Dr. Yeats next details those early symptoms, on the occurrence of which precautionary measures may be successfully adopted to prevent the threatened disease: but he shall speak for himself.

" In the very first commencement of the symptoms, before any alarm is taken, and before any person can possibly imagine, but from experience, that they will often terminate in Water in the Brain, an occasional languor, as if arising from fatigue, with intervals of considerable activity, is observed; it is therefore attributed to this cause, from the disposition too, which the child manifests, of reclining on the sofa, chair, or lap of the mother; the usual degree of healthy appearance of the countenance diminishes, though not permanently, in a transient paleness and occasional collapse of the features; a dark coloured line is observable under each eye, with a dulness of that organ; the usual softness and pliability of the skin diminish, with a consequent harshness and increased heat on the surface; the appetite capricious; occasional thirst; state of the bowels more than commonly tardy; the tongue white, and rather disposed to be dry if examined in the morning; the pulse at this period exhibits no particular morbid change, either in its frequency, strength, or regularity; the urine is at times higher coloured than it ought to be, and from observing that the child has not had an evacuation by the bowels as often as usual, recourse is had to some domestic purgative, and a stool is procured more than commonly consistent and firm, and not in the same quantity as formerly with the same dose of the medicine; no very striking alteration of colour is observable, unless attentively examined, when it will plainly appear that a diseased secretion has already begun to take place in those glands, which pour their secretions into the intestinal canal; at times the evacuation will be throughout much lighter than it ought to be; at others, only partially so, and again the whole will be more tinged with a darker colour of a greenish cast, and accompanied with some quantity of slimy matter; but more than the mere abrasion of the intestines by a purgative will produce. When any uneasiness in the head is complained of, it is not of pain either acute or dull, but of a disagreeable noise and confusion; the scalp, at times, feels sore on being rubbed or touched.

" During this state, upon examination, a puffiness will be felt, and also a fulness observable over the centre of the stomach, extending towards the navel; uneasiness is complained of there from pressure, but like all the other symptoms at this time, they are not permanent; and the only symptom which observes any permanency, is the torpid state of the bowels, although the degree of it varies in different patients; the costiveness is, nevertheless, always more or less present; the sleep is frequently disturbed by restlessness, indicated by repeated movements about the bed. The child is said to be only not well, and this is supposed to arise from some improper food that has been taken. It is evident we cannot, *a priori*, positively determine what exact state of disease this deviation from general health will ultimately produce; but full well I know, that this irregular excitement, this vacillating state, in the way above described, very frequently leads to the next chain of more manifest morbid actions, which terminate in Water in the Brain. We should be, under such circumstances, most carefully watchful.

" I have remarked, that when these symptoms are a prelude to

the fatal disease under consideration, the children are gifted with a precision of ideas and quickness of apprehension much beyond their years. They are thus more interesting objects to their friends, and the loss is more severely felt. Should a practitioner, upon his being summoned, hastily dismiss his little patient, with an opinion that the symptoms arise only from a trifling complaint of the stomach, he will again be summoned upon the arrival of the next more prominent set of symptoms, perhaps violent and dangerous, to witness and lament the error of his hasty conclusion.—p. 31—36.

In this state purgatives are evidently indicated, and frequently prescribed; but in the majority of cases, simply clearing the bowels of their contents is inadequate for the restoration of their healthy action; and our author, correctly conceiving that "morbid secretions are going on," is of opinion that "an alterative effect is wanted, to excite the glands to their healthy functions, in addition to the removal of the accumulated load." For this purpose Dr. Yeats recommends calomel, combined with the compound extract of scammony, or with aloes, rhubarb, or scammony, to be given twice or thrice, or even four times in twenty-four hours. We have observed great benefit to result from the exhibition of three or four grains of calomel, followed by the compound decoction of aloes, with the addition of a few drops of liquor potassæ; a medicine which children take without much reluctance, and which can be continued for a fortnight or three weeks, in doses apportioned to the age of the child, repeated twice or three times a day.

The puffiness and fulness about the region of the stomach is referred, by our author, to an accumulation in the duodenum, and consequent distension of that viscus; impeding the passing of the contents of the stomach through the pylorus, and pressing upon the large blood vessels, and the gall bladder.

"If this state should repeatedly recur, the other digestive organs will soon suffer greatly, but particularly the liver; it will become congested, its functions checked, and its structure injured by the impeded flow of the bile into the duodenum, and all the local and general consequences of deranged hepatic functions will supervene; and as the biliary duct penetrates into the pancreas immediately before it empties itself into the duodenum, the obstructed flow of the pancreatic fluid from the state of the intestine will distend that gland, thus causing furthor pressure upon the biliary duct, and consequently increasing the surcharged state of the hepatic system. It is very possible that this morbid condition of the duodenum may recur at intervals for some time before the liver becomes much disordered; hence healthy bile may continue to be secreted, and yet the fæces will be bad in their appearance, on account of the imperfect digestion of that fluid with the other contents of the duodenum. This repeated distention and disordered condition, will cause an atony and consequent languor in its actions; hence a longer delay of the contents, increasing all the evils."—p. 46—47.

The remedy for this condition of the duodenum is active purging; and if this be continued until the glands begin to pour out more healthy secretions, the ground-work of a dangerous disease may be easily and effectually removed. But, should the chain of diseased action be already lengthened, before the brain be finally affected; and even should this in some degree have taken place, the case, in our author's opinion, is not to be viewed as entirely desperate. The following are the symptoms of this more advanced period of the disease, enumerated by Dr. Yeats.

"The occasional languor wears more the appearance of permanent lassitude; the returns of activity diminish; the child wishes to be almost constantly in a recumbent posture; the unhealthy look of the countenance becomes more permanent, and more observable in every respect; the darkness under the eyes is of a deeper colour; the excitement from feverish action becomes more regular and more apparent, with the consequent harshness of the skin: occasional flushes pass across the cheeks, sometimes more fixed in one cheek; transient pains are felt in the head, more or less acute, and more or less frequent, and at times, when the child will be apparently enjoying itself with comfortable feelings, its attention will be suddenly arrested by this pain, crying out, "Oh my head achs!" Some will complain of the head feeling sore to the touch externally. The pulse now becomes at times much quickened, not particularly irregular; but if carefully examined, and it must be done with some attention, when the child is under the febrile accession, an irregularity will be readily discovered, once, twice, and sometimes more in the minute. Periods of drowsiness supervene; the bowels are more obstinately torpid, and when stools are procured they are of a very disagreeable smell, and of a very morbid appearance; sometimes a glutinous mass intermixed with dark lumps of fæces, at others there is a mixture of a deep green, with matters similar to yeasty fermentation; their colour and appearance will vary much in the same person at different times. Sickness, nausea, and vomiting are frequently troublesome, either when the little patient raises his head from the pillow, to which drowsiness and lassitude had consigned it, or after taking food, or both. In some, the puffiness and fulness about the region of the stomach are not now so perceptible, one part of the morbid actions having yielded to others of a more violent nature; this symptom, though common, does not invariably attend; its being observed too, depends upon what portion of the digestive organs are most under morbid action at the time of examination. All the symptoms bear evident marks of irregular excitement: a giddiness, with an unpleasant cloudiness in the sight, is complained of, and although the eyes exhibit nothing morbid upon examination, a strong light is disagreeable and painful; the urine varies much in colour and quantity, depending entirely on the circumstance of the febrile accessions; the appetite becomes deficient; the thirst troublesome; the tongue white and inclining to be dry. The complaint in this stage of its progress is

still manageable, in some easily so, from the circumstances of the previous habits of the child, as already stated; but it must be recollected, that every hour is now most precious, and any moments lost are scarcely to be recovered; for in proportion as the symptoms form more a disease of the head, so is it the more dangerous, and consequently with the greater difficulty removed."—p. 53—56.

In this stage, our author, considering that the pulse truly indicates that "an inflammatory tension has taken place in the circulating system," recommends both general and local bleeding, in quantity according to the urgency of the symptoms and the age and constitution of the patient. On this part of the subject, contemplating the effect likely to be produced by the lately promulgated theory of Dr. Carmichael Smyth on the junior members of the profession, we were much pleased with the energy with which the following remark is delivered.

"And I know, sir, from what has past between us when conversing on this subject, that your experience will also confirm the fact, when I add that we need not be timid respecting this evacuation, from a false principle that the disease arises from debility."—p. 62.

In addition to the use of the lancet and leeches, Dr. Yeats conceives it now requisite to change the nature of the purgatives employed; and, relinquishing resinous substances, prescribes sulphate of potass in a saline draught, or infusion of roses, to be given twice or thrice in the day; exhibiting also every night two or three grains of submuriate of mercury. When, however, much costiveness prevails, it is requisite to interpose, twice a week, a purgative draught, composed of infusum sennæ, potassæ tartras, and tinctura jalapæ, omitting, on the day of the purgative, the neutral salts daily given in the infusion of roses. With regard to the application of blisters at this period, he observes—

"I have said nothing about the application of blisters. I am persuaded, sir, it is a matter of nice discrimination to apply them; I would not therefore appear to sanction their application by indiscriminate recommendation; it may, however, be stated, that full evacuations should be premised before they are had recourse to."—p. 68.

The diet in this period must consist of nothing more stimulating than weak broth; but as the morbid symptoms decline, and the exhibition of a light tonic is indicated, a gradual return to a more substantial diet may be permitted.

Although, according to the title page, our author might here have closed the consideration of his subject, yet he passes on to the examination of the last stage of the disease, the symptoms of which he thus describes:

"The accession of this state is marked with greatly increased

violence, and with great suffering to the patient: the heat of the skin becomes more intense and harsh; febrile accessions more violent and distressing; the pains of the head more acute and more frequent in their return, and the loud screams of the child on this account are truly afflicting; the pupils of the eyes shew great dilatation, but still contract on the approach of light, though not healthily, by a waving languid vibratory motion; a squinting takes place at times; double vision is complained of, and when the child is desired, though not seeing double at the time, to view an object, I have noticed that he sees the object not where it really is, but on one side of it, by pointing to the spot; a knitting of the eye-brows, with an expression of countenance indicative of great distress; for a few minutes there will be a perfect silence and quietism, with a fixed steady stare of the eyes, and a very great dilatation of the pupils, when a sudden start will take place, with a loud screaming and a quick tossing of the arms over the head; frequent moaning; deep sighing; sickness and vomiting; bowels most obstinately costive; the evacuations when procured are very scanty and ill formed, and extremely offensive; and when it happens that by any active means a good mass is brought away, it looks like any thing but fæces, being dark, yeasty, and gelatinous, smelling like a mixture of sour grains with putrid matter; the tongue foul, sometimes brown and dry; much thirst; no appetite; the urine irregularly secreted, both in colour and quantity; the pulse is very irregular, both in the tone of the vibration and in the flow of the blood; sometimes slow, sometimes quick and intermitting with a tensive feel, until it at last sinks into permanent sluggishness, ushering in its ultimate and fatal celerity; a dewy moisture settles in drops upon the upper lip and around the nose; a considerable wasting of the flesh has taken place; the countenance pallid and sunk, with a hollowness of the temples; blueness of the lips, with their frequent retraction from an attempt but inability to cry, ending in a whining tone from weakness; the eye-lids half open and motionless; the eyes filmy and fixed with a peculiar stare from the extreme dilatation of the pupils; the circulation is extremely hurried; convulsions frequently take place; palsy supervenes, either partially or generally, and death, most commonly in one convulsive struggle, closes the painful scene. —p. 70—73.

In the commencement of this distressing stage, Dr. Yeats believes much benefit is still to be derived from the prompt efforts of art. He advises the application of leeches to the temples, and blisters to the head, with a diligent use of mercury, both taken internally and externally applied, not forgetting "a watchful attention to see that the bowels are daily emptied." He has no confidence in the use of diuretics; but he thinks "digitalis requires consideration, on account of the other peculiar effects of this valuable and extraordinary medicine."—p. 81.

In tracing the production of water of the brain from the digestive organs, our author regards it as a matter of some

importance, with respect to the failure of cure, to ascertain whether the derangement of action be in a part only, or the whole of these organs.

" I believe too, that when the impression is made upon the brain by a portion only of the digestive organs being in a state of diseased action, the hydrencephalic disposition will be more easily cured from a less intensity of cause, than when that disposition arises from the whole of the chylopoietic organs being under morbid action; although the symptoms upon the brain will be, by continuance, to all external appearance the same. Hence it is, I think, that extremely severe cases have terminated favourably, when others, equally or less severe in appearance, have ended in death."—p. 86.

Dr. Yeats, however, does not deny that the action producing water in the brain may commence there, without being sympathetically produced; but he believes that often when this has been asserted to be the case, from the appearances on dissection, the irritation may have nevertheless begun in the chylopoietic viscera; for " very high irritations will exist, without the part which suffers from them shewing any marks of disease from dissection." He also conceives, that although the specific action of scrofula may give rise to water in the brain, yet scrofulous subjects are not more liable to it. He admits, however, that the disease may be " more difficult of cure in such subjects."

Our author concludes his letter by some very apposite observations on the connection between general dropsy and that of the brain; admitting the possibility of such an occurrence: but at the same time remarking, " it is not in this way, I think, that hydrencephalus, as a common occurrence in children, is generally produced; it is a more specific disease."—p. 106.

Upon the whole, we have been much gratified by the perusal of this Letter. It is written with a degree of familiarity and ease authorized by its epistolary form; but at the same time is not devoid of elegance; and possesses sufficient perspicuity. The view taken of the subject is one to which we seriously recommend the attention of practitioners. We have already, in our own practice, warned by most melancholy experience, felt the satisfaction to be derived from it; and we anticipate the general concurrence of our professional brethren in the following sentiment of our author:—" I confess, sir, I would much rather incur the charge of having twenty times supposed cases of water in the brain, by attacking what I consider to be the early symptoms, than once ultimately become witness to this distressing scene by neglect, oversight, or mistake."

IV.

An INDEX *to the Anatomical, Medical, Chirurgical, and Physiological Papers contained in the* TRANSACTIONS *of the* ROYAL SOCIETY *of* LONDON, *from the commencement of that Work to the end of the year* 1813, *Chronologically and Alphabetically arranged.* 4*to.* pp. 101. STACE. London, 1814.

THIS compilation is divided into two parts; the first, containing a Chronological Index of the Titles of the Papers on Anatomy, Medicine, Surgery, and Physiology, inserted in the hundred and three volumes published by the Royal Society between the years 1665-6 and 1813; and the second, an Alphabetical Index, which appears well adapted to exhibit, with the least trouble, the principal subjects and points of interest to a medical inquirer, in this voluminous mass of philosophic lore.

In a work of this description, there is little to animadvert on. But the thanks of the profession are due, where any attempt is made to collect, arrange, and direct the scientific inquirer, without the necessity of exploring, with a labour almost Herculean, for the object of his researches.

We have often lamented, that so much valuable matter as is scattered through the immense tomes of periodical publications that have issued from the press in the last hundred years, on subjects relative to medical science, and under the weight of which the booksellers' shelves actually bend, should be almost lost to the profession from their prodigious accumulation.

Thus, the extent of the fund of treasure we possess appals the student from ever attempting to ascertain its value; and it lies too much neglected and contemned. Many facts deemed new, and the germs of many theories esteemed for their ingenuity, might be discovered in these stores of evanescent contributions; but we are deterred from the task by the bulk of the materials; and the benefits that might result are lost to science.

Would any one have the courage to adopt the design of the one before us, and extend it to the whole of the various periodical medical publications of Great Britain only, he would be conferring an obligation on the profession, that would merit, and we have no doubt, would receive the most marked proofs of approbation and support. He might not perform a work attended with so much eclat as others; but we are confident he would acquire, by the usefulness of his labours, a respect that will never cease.

There is one objection we have to offer to this production, which, as it is serviceable to the profession only, and meant entirely for reference, is of some consequence; and that is, the

form of a quarto, which adds much to its expence and nothing to its utility. Were it a general index to the volumes of the Philosophical Transactions, as an appendix, it might be admissible. As it is, we regret the oversight committed by the author.

Such a task, but upon a far more comprehensive scale, as it embraces the medical literature generally of all countries, has been accomplished and published by *M. Ploucquet.* This invaluable work, which occupies four thick quarto volumes, and is printed in a small but clear type, is intitled "*Literaturæ Medica Digesta; sive Repertorium Medicinæ Practicæ, Chirurgiæ, atque Rei Obstetriciæ*, 1809." Its price, however, will, we fear, be an obstacle to its being found in the libraries of private individuals, so often as its great merits deserve.

PART III.

SELECTIONS.

The Chamelion.—"The greatest curiosity is the chamelion, (lacerta chamelæon, Lin.) found in every thicket. I kept one for several weeks; of which, as it differed in many respects from those described in Arabia and other places, I shall mention a few particulars. The chamelion of the Concan, including the tail, is about nine inches long; the body only half that length, varying in circumference, as it is more or less inflated; the head, like that of a fish, is immoveably fixed to the shoulders; but every inconvenience is removed by the structure of the eyes; which, like spheres rolling on an invisible axis, are placed in deep cavities, projecting from the head; through a small perforation in the exterior convexity appears a bright pupil, surrounded by a yellow iris; which, by the singular formation and motion of the eye, enables the animal to see what passes before, behind, or on either side; and it can give one eye all these motions, while the other remains perfectly still: a hard rising protects these delicate organs; another extends from the forehead to the nostrils; the mouth is large and furnished with teeth; with a tongue half the length of the body, and hollow like an elephant's trunk; it darts nimbly at flies and other insects, which it seems to prefer to the aërial food generally supposed to be its sustenance. The legs are larger than

usual in the lacerta genus; on the fore feet are three toes nearest the body, and two without; the hinder, exactly the reverse; with these claws it clings fast to the branches, to which it sometimes entwines itself by the tail, and remains suspended: the skin is granulated like shagreen, except a range of hard excrescences, or denticulations, on the ridge of the back, which are always of the same colour as the body; whereas a row of similar projections beneath continue perfectly white, notwithstanding any metamorphosis of the animal.

The general colour of the chamelion so long in my possession, was a pleasant green, spotted with pale blue; from this it changed to a bright yellow, dark olive, and dull green; but never appeared to such advantage as when irritated, or a dog approached it; the body was then considerably inflated, and the skin clouded like tortoise-shell, in shades of yellow, orange, green, and black. A black object always caused an almost instantaneous transformation; the room appropriated for its accommodation, was skirted by a board painted black, this the chamelion carefully avoided; but if he accidentally drew near it, or we placed a black hat in his way, he was reduced to a hideous skeleton, and from the most lively tints became black as jet; on removing the cause, the effect as suddenly ceased; the sable hue was succeeded by a brilliant colouring, and the body was again inflated."—*Forbes's Oriental Memoirs*, vol. i. p. 198.

Cold at Night in the Torrid Zone.—"The bark in which we passed the Gulf of Cariaco was very spacious. Large skins of the jaguar, or American tiger, were spread for our repose during the night. We had scarcely been two months under the torrid zone, and our organs were already become so sensible to the smallest variation of temperature, that the cold prevented us from sleeping; while to our surprise we saw that the centigrade thermometer was as high as 21·8°. (70°. 4′ Fah.) This observation, well known to those who have lived a long time in the Indies, is worthy the attention of physiologists. Bouguer relates, that when he reached the summit of Montagne Pelée, in the island of Martinico, he and his companion shook with cold, though the heat was above 21·5 degrees* centig. During our abode at

* "Figure de la Terre, p. liv. The height of this summit is 736 toises, according to Dupuget; and 666 toises, according to M. Le Blond. This elevation consequently is not considerable enough to cause a feeling of cold, as at Chimborazo and Pichincha, by the smaller quantity of oxygen inhaled by the lungs from a dilated air. If the barometer (at 16·2° temperature) keeps at the top of the Montagne Pelée at 24 inches 2 lines (*Le Blond, Voyaux*

Guayaquil, in the month of January 1803, we observed, that the natives covered themselves, and complained of the cold, when the thermometer sunk to 23·8°, while the heat appeared suffocating at 30·5°. Six or seven degrees were sufficient to cause the opposite sensations of cold and heat, because on these coasts of the South Sea the habitual temperature of the atmosphere is twenty-eight degrees. The humidity, which modifies the conducting power of the air for heat, contributes greatly to these impressions. In the port of Guayaquil, as every where else in the low regions of the torrid zone, the weather grows cool only from storms of rain: and I have observed, that, when the thermometer sinks to 23·8°, De Luc's hygrometer keeps up to fifty and fifty-two degrees*; it is on the contrary, at thirty-seven degrees† in a temperature of 30·5°. At Cumana, in very heavy showers, we hear in the streets; *que hielo! estoy emparamado; (what an icy cold! I shiver as if on the top of the mountains;)* though the thermometer, exposed to the rain, sinks only to 21·5°. From the whole of these observations it follows, that between the tropics, in plains where the temperature of the air is in the day-time almost invariably above twenty-seven degrees, warmer clothing during the night is requisite, whenever in a damp air the thermometer sinks four or five degrees."—*Vide Personal Narrative of Travels, by Humboldt and Bonpland*, vol. ii. p. 250.

PART IV.

FOREIGN MEDICAL SCIENCE AND LITERATURE.

PRACTICE OF MEDICINE.

I.—At the sitting of the *Athénée de Medicine* of Paris, on the 26th of March 1814, *M. Villeneuve* communicated the following case, illustrative of the good effects of the external application of opium in the commencement of acute ophthalmia.

"A healthy boy, thirteen years of age, the son of a wine merchant, and exercising the same employment, was attacked,

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Antilles et dans l'Amérique Méridionale, t i, p. 87), the absolute height of this point is 660 toises, according to the rule of M. Laplace; supposing at the level of the sea the height of the mercury 28 inches 1 line, and the thermometer at twenty-five degrees."

* "85·8 and 86·4° of Saussure's hygrometer."

† "73° Saussure."

on the 25th of July, 1813, without any obvious cause, with an acute pain of both eyes; as if they were irritated by prickles. —This pain was much increased by exposure to light; and was accompanied with redness of the conjunctiva, an augmented flow of tears, the sensation of heat in the affected parts, and all the other symptoms which mark the commencement of acute ophthalmia. There was neither fever nor any derangement of the first passages.

"The local pain and high degree of sensibility of the part, characterized by the painful impression which light excited, were the symptoms that particularly required attention. I therefore advised the patient to be put to bed in a darkened chamber, and compresses dipped in a solution of six grains of opium in three fluid ounces of water to be applied over the closed eyelids, and renewed every hour.

"The employment of these means was quickly beneficial; and, in twelve hours, the patient was completely cured of an attack which might have proved long and dangerous*."

II.—At the sitting of the same Society, on the 28th of May, Dr. *Bleynie* communicated a case of acute rheumatism terminated by suppuration, of which the following is an abstract.

"M. Everts, aged twenty, of a delicate constitution, and subject to slight periodical gastric affections, was, in the course of the year 1807, admitted a pupil into the veterinary school of Alfort. Fifteen months after his admission, having been nominated a teacher, he was lodged in a low humid spot, near an outhouse, where the anatomical preparations, intended to form part of the beautiful collection which this establishment possesses, were deposited. Scarcely had he passed six months in his new dwelling, when, about the beginning of August, he experienced some slight pains of the stomach, which daily increased, stretching alternately from the epigastrium to the dorsal and lumber regions, where they produced a sensation resembling cramp. On the 7th of September, this young man complained of a clammyness of the mouth and tension of the abdomen: his tongue was covered with a white fur. A ptisan of succory and a purgative removed the intestinal affection in a few days; but the pains of the epigastrium, back, and loins continued to increase. Warm baths were prescribed; the patient, however, could not continue the use of them, on account of faintings which they occasioned, even when he remained for half an hour only in the water. On the 14th, there being no abatement of the pains, a mixture of rhubarb and cinchona was ordered to be taken every morning.

* *Bibliotheque Médicale*, tom. iv. p. 217.

"21st, The pains suddenly left the parts they had occupied, and fixed in the left leg; which, besides being rendered motionless, was slightly swelled, and extremely painful, principally at the tendo achilles, over which, on the following day, a hard tumor about the size of a walnut was perceived. The rhubarb and cinchona were discontinued, and a simple succory ptisan prescribed.

"4th of October.—The patient was admitted into the infirmary of the school. He complained of a sensation of tension and gnawing of the whole limb, with a slight redness which apparently marked the course of the tendo achilles; the tongue was white and mucous; but the urine not high coloured. One grain of tartar emetic was added to the ptisan. The pained parts were rubbed with a soothing liniment, and covered with a cataplasm of linseed meal.

"From the 4th to the 11th, the symptoms continuing nearly the same, the treatment was not altered. On the 13th, the affected part was considerably softer, without much swelling; but the pain was excessive and singularly augmented by pressure: and the patient was restless and feverish. On the 16th, the redness had nearly disappeared: but the fever encreased with an evening exacerbation, on the 18th, at which time the tongue was dry; the lips and teeth covered with a blackish crust; while the few snatches of sleep which were obtained, were interrupted by frightful dreams. A kind of band, two inches broad, and of a livid red colour, extended from the ham to the junction of the gastronomii muscles. The cataplasm was still applied, but the embrocation discontinued; and the patient was ordered to take four glassfuls of decoction of bark, and a ptisan of barley-water with oxymel.

"On the 22d, a purging supervened, but the other symptoms remained nearly the same. The white decoction was added to the cinchona.

"24th. The abdominal pains were accompanied with a sense of constriction under the arch of the colon.

"25th. The pain of the limb less acute; the face pale and shrunk; the eyes hollow, and black below; purging with yellow fœtid stools.

"26th. The inguinal glands of the affected side swoln since last night, the most acute pain being produced by the slightest pressure on the motion of the thigh upon the pelvis; the foot and lower limb slightly œdematous, and an apparent deep fluctuation in the thick part of the lower limb. An oblong incision gave vent to four pints (deux chopines) of sanious thick matter.

"27th. Pus continued to be discharged; and on probing the wound the skin was found to be completely separated

from the muscles, that portion only which covers the internal part of the tibia remaining unaltered; while the cellular substance between the muscles was completely destroyed by suppuration. The patient was afflicted with diarhœa and tenesmus.

"28th and 29th. The œdema was less in the leg, although it had encreased at the foot, and the swelling of the groin was nearly gone: but the fever continued.

"On the 2d of November a second incision was made, in order to discharge some matter remaining in the lower part of the limb; and a seton passed from the superior to the inferior wound. The purging continued, accompanied with gripings and borborygmi; the fever continued, but with less violence, and without the evening exacerbation.

"4th and 5th. Some portions of membraneous matter were observed in the motions, which were liquid; the tongue was dry and the tonsils red; and the patient was rapidly becoming more and more emaciated. From the 6th to the 9th the purging ceased; the fever returned only in the evening, and very little was discharged by the seton. The use of the cinchona and the white decoction was continued. During the night of the 9th, the patient suffered great pain under the malleolus externus, where a new abscess had formed, which was opened, and a fluid ounce of white pus discharged.

"12th. The fever and purging being completely gone, the use of the poultice was discontinued, and pressure applied to the whole limb by means of a roller.

"15th. The countenance was more natural, although the emaciation was still considerable: the suppuration was much diminished. The vinum antiscorbuticum was joined to the other medicines.

"21st. The seton was withdrawn, although the separation of the skin and muscles still existed; a tent of lint was introduced into each of the orifices, and compression employed. On the 6th of December a glutinous mucus only distilled in considerable quantity from the wounds; the patient had regained his appetite, and began to gain flesh; and he was completely recovered before the end of December*."

III.—*M. Jacques*, a French physician, recommends oxide of manganese as a remedy for epilepsy, in preference to preparations of copper and nitrate of silver. "It does not," says he, "derange the digestive organs like the latter preparations, a slight degree of fever being the only sensible effect it produces, which is always favourable to the cure, confirming the aphorism

* *Bibliotheque Medicale*, tom. xl. p. 68, 72.

of Hippocrates—*Febris superveniens convulsioni, bonum.*" At the commencement of the employment of the oxide of manganese, he directs ten or twelve grains, rubbed up with double that quantity of sugar, to be given during the day; but the doses may be gradually augmented, until fifty or even one hundred grains are taken in twenty-four hours. As auxiliary means, *M. Jacques* recommends infusions of valerian, or of lime or orange leaves, and a vegetable diet. This treatment may be preceded by bleeding and a purgative.

IV.—The *Unguentum Antimonii Tartarizati* has of late been very generally employed, in Germany, as a counter irritant; and regarded as particularly adapted for the cure of Insanity. The following case, illustrative of its effects in this disease, has been handed to us by *Dr. Gumprecht*, of Hamburgh.

"Mrs. T., forty years of age, became insane about four years ago, but recovered in nine months by the use of proper remedies. In the subsequent attack now under consideration, she had been afflicted for six weeks, when my advice was requested. The alienation, which had seemingly been produced by grief and great perturbation of mind, was of a religious tendency; she was melancholy and reserved, and asserted that she had offended God, whose anger she dreaded; and, falling frequently on her knees, implored forgiveness of her sins. She, also, requested that all edged tools might be kept from her, as she felt some impulse to destroy herself. Her vital functions were unimpaired, but sluggish in their action.

"Mrs. T. had been attended by a very skilful physician, who died during the siege of Hamburgh. Solvent, gently evacuating, and afterwards stimulant medicines had been employed, but without effect; when I was requested to prescribe for the patient. I ordered camphor in large doses, with foot-baths of mustard; but these having produced no benefit, I determined on raising an artificial sore on the neck by means of the unguentum ex tartaro emetico, and to keep up the suppuration for some time. The following is the formula employed:

℞ Tartari emetici ʒj.
Axung. Porcini ℥j. Tere ut fiat unguentum.

Two days after the application of this ointment pustular sores appeared, and in six days covered almost the whole of the neck, yielding a copious discharge of pus. To my inquiries, whether these sores occasioned violent pain, she constantly replied, that, except some tickling, she did not experience the smallest inconvenience from them. During the first seven days, I observed no change in her condition; but after twelve days a considerable abatement of the symptoms took place; she be-

came more serene, talked no more of visions, discontinued her frequent prayers, and in three weeks from the first application of the ointment was completely recovered."

V.—The *Liquor hydro-sulphuricus Beguini* (sulphuret of ammonia) has been successfully employed, in Germany, in several cases of gout, particularly in the variety of that disease termed atonic, and attended with symptoms of hysteria. It is administered in aqua melissæ, combined with any agreeable syrup. The dose is at first from two to four drops, and gradually increased to eighteen. The sensible effects of this penetrating remedy, are very similar to those of the sulphureous mineral waters; viz. gentle, and for the most part critical night sweats, and alvine discharges, accompanied with great alleviation of the pains. It is requisite, however, to observe, that larger doses of this medicine are apt to derange the digestive organs; and, therefore, stomachics should be administered when the full dose is prescribed.

VI.—The effect of *oxyd of bismuth* in relieving cardialgia has been long known in this country. It has lately been employed, in Hamburgh, with great success, combined with carbonate of magnesia, in obstinate cramps of the stomach.

*** We feel it to be our duty to correct an error into which we had inadvertently been led in drawing up the Report of Foreign Medical Science for the first Number of the *Repository*. It is there stated that the Literary Journal of Jena (the *Jenaer Litteratur-Zeitung*) had been discontinued; and instead of it, a journal in the French language, under the name *Gazette Litteraire Napoleon*, ordered to be published. We have now to assure our readers, that the *Jenaer Litteratur* was never discontinued, nor the *Gazette Litteraire Napoleon* ever known in Germany.

In the same Report, *Loder* was said to have been appointed Anatomical Professor at Berlin; which was not the case. That celebrated anatomist is a counsellor of state, and physician to the Emperor of Russia, at Petersburgh.

CHEMISTRY.

VII.—*M. Doebereiner*, Professor of Chemistry at Jena, has published the following account of some experiments on *Starch**.

"M. Bouillon Lagrange has remarked that starch, slightly torrified, becomes soluble in cold water†. In my examination

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* It originally appeared in the seventh volume of Schweigger's Journal; but we translate it from the *Annales de Chimie*, tom. xc. p. 29.

† See *Journ. de Pharmacie*, tom. iii. p. 395.

of this fact, and of the characteristics of torrified starch, I observed the following phenomena:—

" A.—When starch is slightly roasted until it acquires a grey colour, and afterwards rubbed up with renewed portions of cold water, five sixths of it are dissolved. The solution is yellowish, and insipid, like that of gum; leaving, when evaporated, a brownish yellow, brittle, diaphanous mass; having a vitreous fracture; remaining dry when exposed to the air; dissolving in cold, but much better in boiling water, and forming with it a viscid fluid, which possesses the following properties:

" *a.* Alcohol renders it milky, whitish floculi being deposited, which are, however, again soluble in water. This solution is a clear viscid fluid.

" *b.* Infusion of galls throws down a yellowish, agglutinated precipitate, which dissolves on heating the fluid, but appears again as it cools: it is therefore a tannate of starch.

" *c.* Barytic water forms in it a copious floculent precipitate, which dissolves completely in the acetic acid, without the disengagement of any gas.

" *d.* It is rendered turbid by nitrate of mercury; neutral acetate of lead renders it milky after standing some time.

" *e.* It is unalterable in the air; that is to say, it does not so soon become mouldy, or sour, as other vegetable substances.

" *f.* At the temperature of the atmosphere, it decomposes nitric acid, and is converted into an acid.

" *g.* Treated with sulphuric acid at an elevated temperature, it is not converted into sugar, nor is it otherwise altered.

" *h.* Mixed with yeast, and exposed to a temperature of from + 18° to 24° Reaum. (72° to 86° Fah.) it does not ferment. Mixed with yeast and exposed for a long time to a temperature of + 30 Reaum. (99.5 Fah.) it is not acidified.

" B.—When starch is roasted until it begins to smoke, and become of a yellowish brown colour, it is completely soluble in cold water. The solution is of a very deep brown colour, and much less viscid than that of A.; but possessing its other characteristics.

" If we suppose that, during the torrefaction of vegetable substances, part of their oxygen and hydrogen combine to form water, or that a part of these two principles are somehow exhausted, we must regard torrified starch, soluble in cold water, as a product containing more carbon and less oxygen than raw starch; and it is necessary to suppose this change of the constituents, in order to explain the very different manner in which raw starch, and starch more or less torrified, are affected by exposure to the air, when treated by sulphuric acid, and mixed with yeast, agents which act powerfully on vegetable substances: for it is well known that starch, in its ordinary

form, becomes gradually acidified when exposed to the air, is converted into sugar when boiled with diluted sulphuric acid; and ferments when mixed with yeast and exposed to temperature of from + 20° to 24° of Reaumur (77° to 86° Fah.)*.

"It appears very probable that the starch contained in malt is rendered soluble in cold water by the torrefaction which that substance undergoes. In this manner, perhaps, we may also explain the reason why beer, brewed with highly torrified malt, does not so readily become sour as that which is made with malt only dried. If the saccharine matter of malt were not in a great degree destroyed at the temperature which torrifies starch, it would be adviseable for brewers to push the torrefaction until the malt become red. Their beer would then keep better. This suggestion is actually practised in some breweries; particularly those of Jena and Koestritz. The beer they supply scarcely ever becomes sour; but it is necessarily not so spiritous, and is less agreeable to the taste than that which is brewed in Franconia, owing to the saccharine principle being altered by the too great torrefaction of the malt, and by the fermentation and boiling.

"My inquiries have convinced me that beer of a pale colour, even when long kept, contains a considerable quantity of starch, on which its nutritious quality depends, although it, at the same time, renders it more ascescent. As my experiments have proved that aqueous solutions of starch can dissolve *tannate of starch*, and that this solution of *tannate of starch* resists acidification, it might be tried whether, by adding, besides the hops, another vegetable substance, charged with tannin, to the decoction of malt, a part of the dissolved starch would pass to the state of a tannate. I doubt much whether this addition would alter the taste of the beer; for tannin, by combining with starch, forms a binary compound which is nearly insipid. It has been long known that the roots of avens (*radix gei urbani*, Linn.), added in small quantity to the decoction for making beer, after it has been boiled, not only gives the beer a very agreeable aromatic taste, but also preserves it from becoming sour:—(*cervisiam ab acore præservant*, scil. *radices gei urbani*, says the Pharmacopœia of Wurtemberg). This effect may proceed from the tannin contained in that root. I cannot say whether the English, who have carried the art of brewing to so great a height, render their beer fit for keeping by a high torrefaction of the malt, and thus converting the starch which it contains into *gum of starch* (for I shall so call highly torrified starch), or by the addition of some other substance; but it is a fact that they add much liquorice and extract of liquorice.

"* See my researches on this subject in *Gehlen's Journal*, ix. 590."

I am inclined to think that they add the liquorice only to give it a sweet taste, which resists fermentation. The *glycion* contained in liquorice, not being fermentible, may enable the beer to keep better, as well as to replace the sugar of the malt, which being totally converted into alcohol by the fermentation pushed to the utmost, gives strength to the beer.

" My experiments upon torrified starch, and my observations upon beer, led me to examine the starch of malt. I prepared some starch from the malt of barley and dried wheat, which I washed with several quantities of cold water, in order to disengage the whole of the gluten and sugar of the malt, after which I dried it.

" A.—The starch of barley and wheat malt is perfectly white, shining, soft to the touch, and in general cannot be distinguished by its physical characters from the starch of raw grain. Examined by a microscope magnifying 400 times, it appears, like common starch, to consist of smooth transparent grains, of an oval form*.

" B.—The chemical properties of the starch of malt are different from those of common starch. Its solubility in water is different; and it is differently affected by heat, sulphuric acid, and yeast.

" *Starch obtained from Malt.*

" A.—Dissolves completely in water at the temperature of from + 55 to 60 Reaum., and forms with it a transparent paste in small masses. This solution loses its consistence when heated, and very rapidly when boiled; it then becomes very fluid, acquires a sweetish taste, and coagulates, as it cools, into milk-white masses, which soften in water, but are not properly dissolved.

" B.—If to the boiling aqueous solution, one hundredth part of the weight of the starch of sulphuric acid be added, it almost instantly loses its gelatinous consistence, and becomes fluid; and, after boiling for an hour, is converted into a saccharine liquid.

" C.—The aqueous solution is not much altered by the addition of yeast, at a temperature of from + 20° to 24° Reaum. The mass scarcely enters into fermentation; but when a little sugar is added, the fermentation proceeds briskly, and continues for a great length of time.

" *Starch obtained from Raw Grain.*

" A.—Dissolves completely in water at the temperature of from + 68° to 72° Reaum., and forms with it a semi-transparent paste, which becomes more consistent when heated, but remains insipid: by continuing the heat, it becomes a little opaque, and finally almost insoluble in water.

" B.—It does not become fluid on the addition of sulphuric acid, until it has boiled for half an hour; and is not converted into a saccharine fluid until after it has boiled for three or four hours.

" C.—The addition of yeast excites a brisk fermentation in the aqueous solution, at a temperature of 25° Reaum., and the mass is changed into a fluid resembling fermented rye, fit to be put into the still for the distillation of ardent spirits.

" * If thirty of the grains of starch be put upon a plate of white glass in contact with a drop of alcohol, and placed under the micro-

"The starch of malt is affected by re-agents (the metallic solutions, for example, nitric acid, solution of potass, tannin, &c.) in the same manner as the starch from raw grain. The differences, however, noticed under B. *a.* and *b.* are sufficient to convince us, that, during the germination of grain, the starch undergoes some change; but that one part is altered in one manner, and another in another. If the germination of grain can be regarded as an electro-chemical process, in which oxygen and hydrogen play a part, I am inclined to believe that the *sugar of the malt* is starch with a surcharge of oxygen; and the *starch of the malt*, starch with a small increase of hydrogen; the hydrogen of the starch of malt, suspended in water at a high temperature, attracting some oxygen, the starch deprived of that hydrogen still, as a binary compound, attracts a little oxygen, and coagulates. The starch found in plants being originally liquid, this state may depend on an excess of hydrogen, and it may combine with oxygen as it changes to a solid. If the quantity of oxygen thus combined be only sufficient to neutralize the hydrogen of the fluid starch, the starch of the seed will be formed; but if it be more, ligneous matter will be the product*.

"I know no substance susceptible of so many modifications as starch. We may still expect to discover many that are now unknown.

"The *sugar of malt* is properly only a half-changed starch; it is imperfect *sugar of starch*, which may be called *saccharetted starch* (amidon sucré). It differs from the sugar of starch by not crystallizing or coagulating like it, but forming a viscid mass; which, as it is less saccharetted, is not dissolved in alcohol

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scope, the whole appears as a drop of water teaming with animalcula infusoria; all the grains seem connected in irregular chains, which attract and repel each other in different directions with such astonishing rapidity, as to appear animated. These movements continue for several minutes; after which they stop, and cannot be renewed by the addition of more alcohol; hence it would seem, that they are not produced by the evaporation of the alcohol, but rather by its combination with the water contained in the starch, or perhaps by the expulsion of the air."

"* Without doubt the reverse of all this may happen. I am even almost inclined to maintain that the two operations are simultaneous; that is to say, that, at first, starch exists not only in the hydrogenated, but also in the oxygenated state (as gum and insipid sugar), and that it takes its peculiar character when its oxygen and hydrogen are reciprocally neutralized. I cannot avoid remarking here that too little attention has been paid to the existence of a hydrogenated or azotized, and an oxygenated matter in plants."

of 90 per cent, but is precipitated by the alcohol from its concentrated aqueous solution under the form of a viscid mass. When the residue, therefore, of the decoction evaporated to dryness is digested with alcohol, the sugar of the malt is not extracted by the spirit: but by mixing the fluid and more concentrated decoction prepared by the brewers, with an equal volume of alcohol of 80 per cent. this spirit becomes charged with the sugar of the malt, whilst the starch, the gum, and the gluten, are precipitated. By evaporating the spiritous fluid after it has been filtered, pure sugar of malt is obtained

The starch of malt undergoes still another modification when malt is infusing in hot water: it does not form a paste with the water, but forms a liquid solution, which does not coagulate by boiling. It would seem that the gluten, or perhaps also the *sugar of the malt* contained in the malt, owes to this starch the property which it possesses in its pure state, of forming a paste with warm water, which, on continuing the heat, assumes the liquid state, and coagulates on cooling: for in the infusion of the malt, where the water, the heat, and the air, act simultaneously, the gluten is fitted to operate powerfully upon the starch and modify it. Its action upon the starch is of such a nature, that when the extract, by infusion of the malt, still hot, is allowed to remain for some time in contact with the marc which retains the greater part of the gluten of the malt, the whole of the liquor becomes sour. It is still more remarkable, that the gluten produces that effect only in its concrete form, and not when it is dissolved conjointly with the starch and the *sugar of malt*. The decoction evidently holds a great portion of gluten in solution; yet, when kept in a cool place, it may be preserved for a long time without undergoing any change. But when it is exposed to agents which can dispose the gluten to coagulate, such as electricity, yeast, or a steady heat, this gluten excites an intestine movement in the whole mass, and modifies not only the *sugar of the malt*, but also the *starch of the malt*. It resembles in this instance the ferment of saccharine fruits, which, according to Gay-Lussac, acts also only when it has attracted the oxygen of the air, and become disposed to coagulate.

It is remarkable that gluten, precipitated from the decoction by electricity, instantly exerts its action upon the starch and the sugar of the malt, and makes them not only become acid, but modified also in another manner, whilst that which is separated by yeast is converted into yeast itself, and does not change the starch and the sugar of the malt into acid, but disposes them to the vinous fermentation. The former circumstance often happens in breweries when a storm occurs during the operation, or when the air is highly charged with electricity.

These two modes in which gluten acts, have been long known; but they have not yet been satisfactorily accounted for; and a further progress in the science is required before this phenomenon, and many others, can be properly explained. In its present state, we can only throw a feeble light upon this long chain of causes and effects."

VIII.—We are happy in being able to present our readers with a translation of the following short but interesting paper by M. *Vogel*, published in the *Annales de Chemie* for January last, which we have just received. It is intitled, "*De l'Existence de l'Acide Carbonique dans l'Urine et dans le Sang.*"

"Proust announced the presence of carbonates in urine, a phenomenon which appeared extraordinary, as that humour contains free phosphoric and acetic acid.

"Chemists have always doubted the existence of carbonic acid in urine; because, in boiling urine, the acid may be formed by the easy decompositions of the urea, which easily happens.

"To confirm the opinion of Proust, I operated without heat, and satisfied myself of the presence of carbonic acid by other methods than those employed by that chemist.

"Having introduced into a flask capable of containing two litres one litre of fresh urine of drink*, I closed it hermetically, by adapting to it a curved tube, the extremity of which dipped into a small cylindrical vessel containing lime water. After having placed this apparatus under the receiver of an air pump, and exhausted it, a very considerable number of air bubbles were separated† from the flask, and passed through the lime water without rendering it turbid; but, after some time, the lime water became milky, and this disengagement of gas continued during two hours, the period in which the vacuum was preserved.

"Much scum formed on the surface of the urine, which required some management in withdrawing the air; without which some of the liquid might have passed over into the lime water, and rendered the experiment useless.

"In re-admitting the air, it is impossible to prevent some portion of the lime water from passing over and mingling with the urine; and, to prevent too large a portion from passing over the extremity of the tube, should be merely within the

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"* The person who made this urine had not drank beer nor any analogous drink. If it be recollected that Drs. Wollaston and Marcet found prussiate of potass in the urine of a person who had swallowed some of it, the utility of this precaution must be obvious.

"† I did not ascertain whether this air exactly resembled atmospheric air."

surface of the lime water. A sufficient quantity, however, of lime water remains to prove the existence of carbonate of lime.

"Urine of digestion presents the same properties. I put under the receiver of an air-pump some urine passed by a person who had eaten asparagus; much carbonic acid gas was disengaged; but this urine did not lose the peculiar fetor imparted to it by the asparagus.

"New milk, introduced into the apparatus already described, and allowed to remain some time under the receiver of the air-pump, did not swell up so much as the urine, and scarcely rendered the lime water turbid; so that I could not possitively assert that fresh milk contained carbonic acid; but when milk which had been some time drawn was employed, much carbonic acid was disengaged.

"Fresh ox bile was affected in the same manner as milk.

"Blood, on the contrary, displayed the same phenomena as urine. I introduced some fresh ox blood into a flask furnished with a curved tube, dipping into a vessel full of lime water, as in the preceding experiments. On producing the vacuum, the blood rose prodigiously, and formed a considerable scum. Much carbonic acid was disengaged from the first, and the lime water was soon rendered very sensibly turbid.

"These experiments demonstrate that fresh urine and blood contain ready-formed carbonic acid, and that the evolution of this acid does not depend, as many chemists believe, on the decomposition of some constituent principle*."

IX.—*M. J. S. E. Julia*, Member of the College and Society of Pharmacy of Paris, has published an analysis of the mineral water of *Rieu-Majou*, in the circle of Saint-Pons, department of the Henault. This spring belongs to the class of acidulous chalybeate waters; and preserves a constant temperature of 10°+0 Reaum. (54·5 Faht.) Fifteen kilogrammes were found to contain 34 grammes, 465 milligrammes of foreign matter, composed of the following ingredients:

Carbonic acid gas (in a free state)	14.811
Muriate of magnesia	1.274
——— of lime	0.956
——— of soda	0.532
Carbonate of magnesia	0.264
——— of lime	5.946
——— of iron	4.460
Siliceous matter and loss	0.222
	34.465

* *Annales de Chimie*, tome xciii. p. 71.

BOTANY.

X.—*Continuation of Koelreuter's Dissertation on the Form of the Anther Powder of Plants, (from p. 250.)*

B. With sharper extremities.

Physalis *Alkekengi*
Solanum *Dulcamara*
—— *nigrum*
—— *Melongena*
Parnassia *palustris*
Chelidonium *majus*
——— *corniculat*
Stachys *palustris*
Antirrhinum *Elatine*
——— *monspessulan*
Limosella *aquatica*
Artemisia *campestris*
Mimosa *virgata*

A. Cylindrical—regular.

Justicia *Adhatoda*
Verbena *Aubletia*
Heliotropium *europæum*
Borago *orientatis*
Lycopsis *variegata*
—— *arvensis*
Vinca *minor*
—— *major*
—— *rosea*
Sanicula *eupropœa*
Heracleum *Sphondylium*
Sium *nodiflorum*
— *Sisarum*
Phellandrium *aquaticum*
Athamanta *Orcoselinum*
Chærophyllum *sylvestre*
Pastinaca *sativa*
Anethum *graveolens*
Apium *graveolens*
Ægopodium *Podagraria*
Turnera *ulmifolia*
Cercis *Siliquastrum*
Agrimonia *Eupator*
Melianthus *minor*
Polygala *vulgaris*
Amorpha *fruticosa*
Crotalaria *capensis*
Ononis *spinosa*
Anthyllis *vulnerar*
Lupinus *albus*
——— *angustifol*
Pisum *sativum*
Lathyrus *sativus*
——— *odoratus*
——— *annuus*
——— *tuberosus*
——— *pratensis*
——— *sylvestris*
——— *latifolius*
Vicia *Cracca*
— *sativa*
— *Sepium*
— *Faba*
Ervum *hirsutum*
Cicer *arietinum*
Cytisus *Laburnum*
—— *sessilifol*
Robinia *Pseudo-Acacia*
Colutea *frutescens*
Coronilla *Emerus*
——— *valentina*
——— *varia*
——— *glauca*
Scorpiurus *vermiculata*
Hedysarum *coronarium*
Gelega *officinalis*
Astragalus *glyciphyll*
Trifolium *Melilot. off.* fl. fl.
——— *rubens*
——— *arvense*
——— *agrarium*
Lotus *hirsuta*
— *corniculat*
Medicago *sativa*
——— *falcata*
——— *lupulina*
Centaurea *Cyanus*
Centaurea *montana*
Viola *tricolor*
Passiflora *suberosa*

B. More contracted in the middle.

Justicia *hyssopifolia*
Borago *officinarum*
Dodecatheon *Meadia*
Tordylium *Anthriscus*
Caucalis *grandiflora*
—— *leptophylla*

(To be continued.)

PART V.

MEDICAL AND PHYSICAL INTELLIGENCE.

I.—LECTURES AND SOCIETIES.

LECTURE V.—*On Albumen and Gelatine, and on the Composition of the Blood.* By Professor BRANDE, at Apothecaries' Hall, London.

HAVING, in my last discourse, considered the decomposition of animal bodies, and having pointed out their ultimate elementary principles, I proceed to the more important subject of their proximate component parts.

They are less numerous than those which I described as belonging to the vegetable kingdom. The most abundant is *Albumen*, for it constitutes the leading ingredient in the blood, in muscular fibre, and in most of the soft solids of animals. It also exists in bone, and in many of the secretions. The term albumen was originally applied to the white of egg, and the properties of this substance are extremely characteristic. It is coagulable by heat, by alcohol, and by most of the acids. When heated to about 160°, it loses its transparency, and gradually coagulates into a tremulous solid mass. In this state it has acquired many new properties. It is now insoluble in water, and when kept for some days in a warm place, it dries up and becomes semi-transparent, and is very analogous to horn. Whereas, in its original fluid state, it readily unites with water, and is prone to run into putrefaction, unless it be hastily dried at a temperature of about 100°, in which case it becomes a brittle transparent solid. If the solution of albumen be considerably diluted, heat merely renders it turbid, as do also the acids, especially the nitric; and this is conveniently employed as a test for the discovery of minute portions of albumen in water. In the year 1808, I ascertained, that when a solution of albumen is submitted to the operation of the electrical pile of Volta, it suffers a coagulation, and that the solid matter is separated in the greatest abundance at the negatively electrified surface. This not only furnished me with a means of discovering albumen more readily than the other tests, but suggested an explanation of the cause of its coagulation, which before had never been satisfactorily explained. I found that the maximum of coagulation was at the negative surface, and that there the alcaline matter is separated, which is pure soda; I was accordingly induced to regard liquid albumen as composed of pure soda, albumen, and water, and to attribute its fluidity to the presence of the alcali; which, when removed either by electricity, or acids, or alcohol, enables it to assume the solid form. If we coagulate white of egg by nitric acid, nitrate of soda results; if by muriatic acid, muriate of soda; if by sulphuric, sulphate of soda;

if by alcohol, the alcohol contains soda. The only difficulty in this explanation relates to its coagulation by heat, which I think may be accounted for by assuming, that white of egg, in its fluid state, is a compound of albumen with alcali and water; that when heat is applied to it, the existing affinities between these bodies are modified; that the alcali, before in chemical union with the albumen, is transferred to the water, and that this separation causes the coagulation of the albumen. The aqueous alcaline solution thus formed, often re-acts upon the solid albumen, and appears as a yellow fluid, oozing upon its surface.

This notion of the cause of coagulation is further countenanced by the circumstance of water alone being capable of partially affecting the coagulation of the white of egg, even without the assistance of heat; and in this as in the other case, the water becomes alcaline. I mentioned that when the electrical poles are immersed in a solution of albumen, there is some coagulation at the positive surface. This arises from the separation of a little acid derived from the decomposition of minute portions of saline matter existing in it.

Besides the modes of discovering albumen which I have mentioned, others have been employed; but in them the alcaline and saline matters are apt to interfere; one of the best is solution of corrosive sublimate, which forms a white precipitate in solutions of albumen.

Such then are the characters of albumen. If I have been somewhat minute in their enumeration, it is because this substance forms the most important part of many animal structures. There is another very abundant and well marked proximate principle of animals, called *Jelly*, or *Gelatine*. The parts which afford it, are various. The *cutis*, or true skin, is almost entirely composed of it; and isinglass, which consists of the dried peritoneum, air bladder, and sounds of the sturgeon, is gelatine in a state of considerable purity. Carpenters' glue and size are other instances. Gelatine is well characterized by solubility in water, and by the tremulous mass commonly called jelly, into which the concentrated solution passes when cold. It is not coagulable by heat, acids, or electricity; but it is insoluble in alcohol, which precipitates therefore its aqueous solution. Vegetable astringents form with jelly a dense insoluble precipitate; but this test cannot be depended upon as very characteristic, for albumen is also precipitable by it. Jelly varies in viscidity, and in the ease with which it dissolves in water: the skins of young animals, and those which are most flexible, being most easily acted upon by water. Gelatine, when in solution, is extremely putrescible; and those parts of animals which contain it in the largest proportion, are most prone to run into a decomposing state. If coagulated albumen be steeped for some hours in dilute nitric acid, it becomes transparent, soluble in water, and acquires the properties of gelatine.

For many of the facts which I have enumerated, we are indebted to the labours of Mr. Hatchett, to whom animal chemistry is deeply indebted for the rapid advances which he made in it, as long as it occupied his attention; nor must the services of Dr. Bostock in this department of our science be forgotten. To their works I must

refer you for particulars, which I cannot dwell upon here without exceeding my limits. The zeal and activity of Professor Berzelius have also led him into this channel, and he has published a work expressly on animal chemistry, as well as several detached essays; here, amidst much hypothesis, are some curious facts, which however do not always warrant the conclusions drawn from them. It is now time to say something of the *Blood*, with which I shall conclude this Lecture.

The blood differs in appearance and properties in different animal tribes. In insects, it is generally colourless; in other animals, there are some parts largely supplied with colourless blood, while coloured blood circulates in the vital parts. In man, and the more perfect animals, red blood circulates throughout the frame, excepting in those vessels which are so minute as not to admit the red particles when in a healthy state.

The properties and peculiarities of human blood are chiefly referable to the presence of albumen, of which it is a very concentrated solution. Whilst circulating in the vessels, the blood is a homogeneous fluid; but when removed, it suffers coagulation; that is, a part of the albumen solidifies spontaneously, and, carrying with it the colouring particles, forms what medical men have called the *crassamentum*, while another portion remains fluid, which is called the *serum*.

Gelatine has been supposed to exist in serum, but there is none. The crassamentum is separated by washing with water into coagulable lymph (albumen), and colouring matter. The latter is soluble in water, by which it is freed from small vesicular particles, which have been called the red globules*.

The characters of the serum are derived from the albumen which it contains, and which is more alcaline than white of egg. It is coagulable by heat, acids, alcohol, and electricity; it changes vegetable blues to green. According to an elaborate analysis by Dr. Marcet, one thousand parts of serum contain,

Water	900
Albumen	86·8
Muco extract	4
Muriate of soda, with a little muriate of potash	6·6
Subcarbonate of soda	1·65
Sulphate of potass	0·35
Phosphate of lime, iron, and magnesia	0·60

The colouring matter of the blood is an animal substance of a peculiar nature; it is soluble in dilute muriatic and sulphuric acid, retaining its red colour. Nitric acid instantly destroys its colour. Alcalies form with it red solutions. The red colour has been ascribed to iron, but many experiments have proved, that this opinion is erroneous. This subject is curious, but too extensive to be dwelt

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* Mr. Brande referred to Dr. Young's researches respecting the nature of the red globules, detailed in his Introduction to Medical Literature.

upon in these Lectures. I must refer to a paper which I communicated to the Royal Society, and which has been published in the Transactions for 1812, and also to my Lecture on Respiration in the last Course*.

Albumen exists in great abundance in some of the secretions, especially in bile. It is also found in variable quantities in the lubricating fluids of cavities, and when these are increased in quantity by inflammation, the proportion of albumen is usually increased. One thousand parts of the fluid from the abdomen of a dropsical patient afforded me ten of albumen. After the operation of tapping, inflammation came on, and a speedy collection of fluid took place, which contained twenty-five of albumen in a thousand. Solid albumen constitutes the cuticle, horns, nails, and some other parts of animals; it exists in bone, and, united with variable portions of gelatine, it forms hair, cartilage, ligament, muscle, and almost all the soft solids. The pliability and putrescibility of parts is often referable to the gelatine they contain; and hair, which is soft and easily affected by changes of weather, contains much more gelatine than that which is harsh and stiff, and which moisture does not soften.

Royal Society.—On Thursday the 2d of February, part of a paper by Dr. Watson Philips was read, on the Cause of the Motion of the Heart of Animals. Various opinions on this subject have been entertained by physiologists. Of late, M. Gallois has endeavoured to show that this motion depends entirely upon the spinal marrow, and immediately ceases, when the spinal marrow is removed or destroyed. The motion of the heart, which continues for some time after it is removed from the body, he considers as similar to the motion of any other muscular body from stimuli; and the stimulus in this case is the arterial blood. Dr. Philips related a great number of experiments on rabbits and frogs, which appeared quite inconsistent with M. Gallois's hypothesis. Rabbits were rendered insensible by a blow on the occiput; the spinal marrow and brain were then removed, and the respiration kept up by artificial means. The circulation and motion of the heart continued as usual. When stimuli, as spirit of wine or opium, were applied to the spinal marrow or brain, the rate of the circulation was accelerated. When the hind legs of a frog are kept for two minutes in alcohol, the animal loses the power of motion. In this case it expresses great pain; but if tincture of opium be used instead of simple alcohol, little or no pain is expressed.—On Thursday the 9th of February, Dr. Philips's paper was concluded. He found that the peristaltic motion of the intestines continued after the brain and spinal marrow were removed. When the brain or spinal marrow were suddenly crushed, the effect upon the motion of the heart was much greater than when these organs were removed by cutting, or gradually destroyed by means of a wire. From these experiments Dr. Philips concludes that the action of the heart is independent of the brain and spinal

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* Vide *Repository*, vol. i. p. 431.

marrow; but that it is capable of being affected by these organs. He conceives, with Haller, that the heart and muscles possess excitability independent of the brain and spinal marrow; that the difference between the voluntary and involuntary muscles depends upon the stimuli; and that animals possess three different sets of organs, the muscular, the nervous, and the sensorial, independent of each other, but capable of influencing each other.—On Thursday the 16th of February, a paper was read from Mr. Clift, describing experiments to ascertain the influence of the spinal marrow on the action of the heart in fishes.

Linnæan Society.—On Tuesday the 7th of February, two communications from Dr. Mitchell of New York were read. The first gave an account of a singular species of pleuronectes found in the New York rivers. Dr. Mitchell is inclined to consider it as a variety of the white-bellied pleuronectes; though the differences are considerable. Among others, the belly is nearly as dark as the back. The second paper contained a description of a number of species of fish observed by Dr. Mitchell, and which are caught on the coast or in the rivers.—On Tuesday the 16th of February, a letter was read from Sir J. E. Smith to Mr. Macleugh, in which he shews, from a manuscript of the late Dr. Sibthorpe, that the lignum rhodium of Pococke, though not of the ancients, is the liquidamber styraciflua.

London Medical Society.—The Anniversary Meeting of this Society was held on the 8th of March, for the Election of the Officers and Council for the present year, when the Annual Oration was delivered by Mr. Taunton: the subject was on Hernia.—Dr. Clutterbuck will give the Oration for 1816.

Royal Medical Society, Edinburgh.—This Society having agreed to appoint a Committee for the purpose of receiving the communications of Members, and of others through their medium, who may favour the Society with interesting facts and experiments in medicine, or with unusual appearances in morbid dissection, beg leave earnestly to invite the members to transmit such communications to the Society as soon as possible.—The Committee, consisting of six extraordinary members resident in Edinburgh, together with the four Presidents, *ex officio*, will proceed immediately to consider such papers as may be transmitted to them with an ultimate view to publication.

II.—MEDICAL.

Galvanism a Solvent for Urinary Calculi.—"Take an instrument similar in shape to a common catheter, made with elastic gum, waxed silk, or any non-conducting substance, with two cavities, one for the wire from the positive end of the battery, the other for the wire from the negative end. This instrument with the wires should be introduced along the urethra into the bladder till it touches the stone; the wires having elasticity, and an inclination to bend outward, would facilitate the operation, as they would then be more easily fixed, one on each side the calculus. When so fixed, which a surgeon accustomed to similar operations could easily determine, the patient should

be left at rest, and the action of the battery suffered to proceed. It is not to be supposed that in all cases of calculous affection this plan is advisable, but in those where the bladder contains but one concretion: and from the best information I can procure, it seems that, on the average, six-sevenths of those afflicted have but one concretion, I have no doubt of its success. The patient immediately after, or towards the close, of the action of the battery, should be suffered to drink plentifully of diluents, that the disunited matter may be carried off by copious evacuations of urine."—*Ann. of Philos.*

Cataract cured by Arnica Montana.—M. Newmann, a physician at Dresden, has published an account of a case of complete cataract in a soldier, brought on by great fatigue, which was cured by the continued use of a strong infusion of the flowers of Arnica. Besides the internal use of the medicine, the following collyrium was employed:

℞ Florum Arnicæ ʒj
Aceti Distillati bullientis 0j. Digere per quatuor horas, et liquori collato adde
Carbonatis Ammoniæ q. s. ad saturationem.

III.—SURGICAL.

Improved Operation for Popliteal Aneurism.—From a letter dated March 22d, with which we are favoured by P. Crampton, Esq. Surgeon-General for Ireland, we give the following extract: "The Operation for Popliteal Aneurism, as described in the *Medical Repository* for last February (No. 14), has been repeated by Mr. Dease, Professor of Anatomy at the Royal College of Surgeons in Dublin, with the most complete success. The artery was compressed *(but not tied)* for twenty-four hours. During this period, the blood in the aneurismal sac entirely coagulated, and the pulsation never returned. The wound was nearly healed on the sixth day. The absorption proceeded so rapidly, that on the tenth day the tumour was diminished about one-third; and the man could bring the leg to very near the extended position. The operation was attended with very little pain, and was not succeeded by the slightest constitutional irritation."

IV.—CHEMICAL.

Gelatine of Bones.—M. Darcet, Comptroller of Essays in the Mint at Paris, has invented a method of extracting the whole of the gelatine contained in bones, by which it can be rendered useful, not only for all the purposes for which isinglass is generally employed, such as clarifying wines and coffee, and forming jellies; but, also, when boiled with a small portion of beef, and a proper share of vegetables, for forming an extremely nutritious, light, and sufficiently palatable article of diet. He first separates the phosphate of lime, by putting the bones into much diluted muriatic acid; thus obtaining the animal part of them in a solid form, and in the shape of the bone. To free the gelatine from every portion of muriatic acid and any fatty matter, it is next put into a basket, and plunged, for some seconds, into boiling water: and finally, after having been wiped with cloths, it is exposed to a stream of cold fresh water, which cleans it completely,

and renders it white and semitransparent. It may be kept good for many years, by drying it on hurdles exposed to warm dry air, and when dry inclosing it in cases. Gelatine, thus prepared, when cut into small pieces, dissolves quickly and almost completely in boiling water; and possesses a tenacity equal to that of the best glue.

Metallization of Charcoal. — *M. Doebereiner,* Professor of Chemistry at the University of Jena, in Saxony, informs Mr. Accum, that he has discovered charcoal to be a metallic substance. The following statement has been received from M. Doebereiner by Mr. Accum: "I hope soon to be able to communicate to you the successful metallization of charcoal, which I have reason to believe to be a metallic substance: in cast-iron and in steel, the metal which it contains is present in a metallic state, and may be separated from both of them by the united action of phosphorus and an alkali." Professor Doebereiner promises to communicate further particulars concerning this subject.—*Annals of Philosophy.*

V.—NATURAL HISTORY.

Burning Gas in the Appennines.—Dr. Thomson, in a late Number of the *Annals of Philosophy,* having mentioned that a jet of burning gas had been *discovered* by Sir H. Davy in the Appennines, Dr. Granville, in a letter published in the last Number of the *Annals,* states that Sir H. Davy does not claim any right to *discovery* on this subject, as the fact has been long known to all classes of persons travelling on the road from Florence to Bologna, and had been particularly noticed by Spallanzani, Faber, Lalande, and others. Spallanzani had perceived the smell of hydrogen in the gas; and Sir Humphrey conceives it to consist of carburetted hydrogen. The following is the description of this phenomenon by Dr. Granville. "The jet of gas alluded to is seen on the top of Monte di Fo, half a mile on the right of Pietramala, coming from Florence. The column occupies in circumference a surface of from ten to twelve feet. The ground around it is covered with large and small masses of primitive rocks, or rather of fragments of quartz and *mica argentine* held together by an argillaceous cement, and of lime-stone. Very feeble signs of vegetation are preceptible, either on this or the surrounding mountains. Monte Fo forms part of Mount Radicoso, or of the highest of the Appennine Ridge, being 883 metres, or 2901 English feet, above the level of the Mediterranean sea. About half a league from this gas-volcano, and from *Pietramala,* there is a well of cold water, called *Acqua buja,* from which there is a constant evolution of what I myself found to be carburetted hydrogen, which takes fire at the approach of a lighted taper, and burns with a brilliant yellow flame. The Italian naturalists had hitherto considered these emissions of subterraneous gas, by them called *fumarole,* to be *sulphuretted hydrogen,* the formation of which they derived from a decomposition of pyrites, that are found in great quantities at a considerable depth in the Appennine country. They fancied they discovered the sulphur, which the decomposition of the gas set at liberty, incrustating the objects surrounding the spot from whence arose the gas; and I confess having myself been of the same opinion

during my last visit to the Appennines in the course of last summer. My examination, however, was very superficial, and too hasty to be correct. That of Sir Humphrey Davy is, of course, of quite a different character."—*Annals of Philosophy.*

Weather at Calcutta.---During the winter months, at Calcutta, there is always a fog every evening and morning. In the evening it rises high enough to cover the ground floors of the houses; but the upper stories are still visible. On this account the ground floors are considered as unhealthy, and are never inhabited by Europeans; but employed either as warehouses or as lodgings for black servants. In the morning the fog is still more intense, and rises higher, so as to conceal the sun from view an hour and a half after his rising. When the sun sets through the fog, he assumes a beautiful vermilion colour. The fog itself acquires the same tint. It is reflected from the water of the river; so that all nature appears painted of the finest red imaginable.—*Ibid.*

VI.—DYNAMOLOGY.

One of the most singular facts in Macrobiotics has been communicated by *Hoffrath Bernstein* in *Neiuired.* A woman in a neighbouring village, who has attained the age of 103 years, and is still wonderfully cheerful and active, has had several remarkable occurrences connected with her life. She menstruated for the first time in her twentieth year, and in her forty-seventh bore her first child, from which period till her sixtieth year, she had eight children, four of whom are still alive. After the birth of her last child, menstruation ceased for fifteen years, but then re-appeared, and continued returning regularly until she was ninety-nine, when it finally stopped. She had never suffered from any disease in her youth, although she had endured much fatigue, and only twelve years ago was for the first time seriously ill. Her disease was a violent pectoral attack, which she cured by taking cold water. After this period, the remedy which she always and successfully employed in every indisposition was a little train oil with some brandy. Parturition was generally difficult with her. She suckled all her children. Her appetite and digestion have been always good. She hears distinctly, and reads without spectacles. She has not many teeth; but her hair is nearly black, a few grey hairs only being perceptible. She has a perfect recollection of all the events of her youth. Her father is said to have lived to the age of 107.

To this we may add the following; with which we were favoured by Dr. Merriman, who received it from Mr. Maurice, a most respectable Surgeon, at Marlborough, Wiltshire:

"From the Register of the parish of Little Bedwin, Wilts, it appears, that Elizabeth, daughter of John and Jane Mildenhall, was baptized August the 5th, 1744, and was married to George Lansdown, Labourer, of the same parish, April the 24th, 1773, and had by him the following children:—Luke, baptized June 13, 1773; Mary, baptized October 12, 1777; John, baptized April 2, 1780; Sarah, baptized February 2, 1783; Rosanna, baptized May 14, 1786; George, baptized August 30, 1795; Esther, baptized December 8,

1802.—The said Elizabeth Lansdown, at the birth of her last child, was *fifty-eight years and four months* old, and is now, as well as her husband, George Lansdown, living at Chisbury in this Parish.

(Signed) B. Newton, Vicar of Little Bedwin, Nov. 1812."

Mr. Burrows delivered a woman who had completed her fifty-third year: nine years had elapsed since the birth of her last child.

VII.—MISCELLANEOUS.

The Officers of the Medical Department of the Army lately serving in the Peninsula have presented Sir James MacGrigor a superb service of plate; the centre ornament of which is an elegant vase of an antique form bearing the following inscription:

JACOBO McGRIGOR, EQUITI, M. D.
Coll. Reg. Med. Edin. Soc.
Nosocomiorum regalium inspectori generali
Viro admodum insignito
Sive acumen ingenii nativum respicias
Sive strenuam illum atque indefessam
Muneribus inspectoriis navatam operam;
In quibus apud Lusitaniam, Hispaniam, Galliam,
Longe lateque fungendis
Non bono solum Publico cum integritate prope singulari
Verum etiam Sociis suis cooperantibus
Comitate quadam et benignitate propria
nunquam non consuluerit;
Cui denique sacros Hygeiæ fontes aperire
Atque artis medendi divinæ studia
Vim æmulam ingenuas apud Scientias eliciendo
Promovere feliciter omnino contigerit;
Hocce monumentum, quale quale pignus!
Summæ in ducem suum dignissimum observantiæ
Sacrum ac perenne vult
Status major nosocomiensis
Wellingtonianus
Anno. Dom. 1814.

B. Travers, Esq. has been unanimously elected Surgeon to St. Thomas's Hospital, Borough, vice John Birch, Esq. deceased.

VIII.—NOTICES OF LECTURES.

Mr. Thomson will commence his usual Course of Lectures on Botany and Phytology early in May. In these lectures, besides the ordinary instructions in Systematic Botany, the organization and physiology of vegetables are fully elucidated. The illustrations, as far as it can be accomplished, are selected from the plants medicinally employed. For particulars, application may be made to Mr. Thomson, at his house, 92, Sloane Street, mornings and evenings.

Middlesex Hospital.—Dr. Merriman's next Course of Lectures on Midwifery and the Diseases of Women and Children, will be delivered at the above Hospital during the months of April and May.

The introductory lecture will be read on Monday, April the 10th, at half past ten o'clock.

Dr. Clarke, Professor of Mineralogy to the University of Cambridge, began his Course of Lectures on the 14th of February, at the Botanic Garden.

Dr. Davis will commence his Summer Course of Lectures, on the Theory and Practice of Midwifery, on Monday the 24th of April, at his house, 18, Lower Charlotte Street, Bedford Square.

Dr. Spurzheim will re-commence his Physiognomical Lectures next Month, at his House, No. 11, Rathbone Place.

IX.—LITERARY WORKS IN OR PREPARING FOR THE PRESS.

A Translation of the celebrated little work of Calarius "On Certainty of Medicine." By Dr. Ronalds of Coventry.

A New Mode of Opening the Bladder in certain Obstructions of the Urethra and Prostate Gland; on removing the Tonsils from the Throat, and other Tumours from the accessible Cavities of the Body, &c. &c. By Mr. Grainger, Surgeon, Birmingham.

A Series of Chemical Essays. By Mr. Parkes.

General Anatomy applied to Physiology and Medicine, translated from the French of the late Professor Xavier Bichât.

The large Anatomical Plates of the Human Gravid Uterus, size of Nature, by the late William and John Hunter, are about to be re-published.

On Gun-Shot Wounds By G. J. Guthrie, of the Royal College of Surgeons, London, and Deputy Inspector of Military Hospitals.

The Sixth Volume of Medico-Chirurgical Transactions.

A Treatise on some Practical Points relating to Diseases of the Eye. By the late John Cunningham Saunders. A new Edition.

Reports on the Pestilential Fever of Spain; being the result of his Observation and Enquiries into the Origin and Progress of that Disorder in Andalusia in 1800, and of the Fatal Epidemics at Gibraltar in 1804, and of those at Cadiz in 1810 and 1813. By Sir James Fellows, Knt.

A Geological Essay on the General Structure of the Earth. By Dr. Kidd, Professor of Chemistry to the University of Oxford.

A New Edition of the Notes on the West Indies, with considerable alterations and additions. The new matter will contain remarks on the islands of Martinique, Jamaica, and St. Domingo, with further Observations on the Seasoning or Yellow Fever. By Dr. Pinckard.

A new work has recently appeared in Paris, intitled "*Traité sur la Fièvre Entero-Mésenterique,*" par M. Petit; in which the author claims the discovery of a new disease; but upon what grounds we know not. The book, with several others, was on the road to us; but we fear the unexpected turn affairs have taken in France, will again interrupt a correspondence scarcely established.

A METEOROLOGICAL JOURNAL,

From the 21st of February, to the 20th of March 1815,

KEPT AT RICHMOND, YORKSHIRE,

230 Miles NW from London.

D.	Barometer. Max.		Barometer. Min.		Therm. Max	Therm. Min.	Rain Gage.	Winds.	Weather.
21	29	60	29	57	52	43		SW..W..	1 4 Cy.. 3 S.
22	29	67	29	63	56	45		SW..WSW...	1 4 Cy.. 2 S..
23	29	63	29	47	54	43		SW..WSW...	1 Cy.. 2 S..
24	29	62	29	30	56	42	02	SE.SW...	1 Cy.. 2 S.. 4 Rain.
25	29	38	29	38	54	43		SW....	1 Cy.. 2 S..
26	29	80	29	73	47	32		SW...	1 S...
27	30	04	30	02	50	37		SW..	1 S.. 4 Cy..
28	29	93	29	81	46	30		SSE..	1 S....
1	29	88	29	81	48	32	03	S..	1 M.... 2 S.. 3 Cy.. 4 R.
2	29	88	29	76	48	30		W.SE.	1 S..
3	29	78	29	71	50	35		SE.SW...	1 Cy.. 2 S..
4	29	78	29	66	54	43		S by E..	1 Cy.. 2 S. Small Rain.
5	29	70	29	70	55	40		S.vbl.	1 Cy.. 2 S..
6	29	63	29	33	54	41		SW..	1 Cy.. 2 S..
7	28	91	28	68	49	41	43	SW....	1 Cy... 2 R...
8	29	09	28	98	49	35	08	SW....wsw..	1 Sh. 2 S.. 4 Rain.
9	28	83	28	78	42	29		SW...WSW..	1 S.. and Sh of Snow..
10	28	90	28	88	39	31		WSW...	1 S.. and Sh of Snow.
11	29	10	29	06	39	31	Melted	W..	1 S... and Sh of Snow.
12	28	49	28	36	38	34	Snow.	SE..	1 Cy.. 2 Sn and R..
13	29	07	28	83	41	32	58	S.NW..	1 Sn.... 2 S...
14	29	43	29	43	41	34	03	WNW..	1 S.. & Sh of R & Sn.
15	29	18	29	11	47	43	02	S.SW...	1 R. 3 Cy..
16	29	46	29	41	48	38	01	SW...W..	1 R. 2 S..
17	20	58	29	49	53	38		W...	1 S..
18	29	66	29	53	52	38	02	W..NW.,	1 R. 2 S... 3 Cy..
19	29	57	29	57	58	47		E. W by N..	1 3 4 Cy.. 2 S...
20	29	47	29	30	60	42	01	SW.S.	1 Cy.. 3 S.. 4 R.

Observations on Diseases at Richmond.

The quantity of rain during the month of February was 1 inch 99-100. The weather has been mild for the season, though in general windy.

Catarrhal and pulmonary complaints have increased during this period. Typhus has nearly disappeared. Some cases of Asthenia, Erysipelas, Gastrodynia, Hæmoptysis, Ophthalmia, Phthisis Pulmonalis, and Rheumatismus have been under treatment. Two cases of Phthisis have proved fatal. The same slight febrile complaint mentioned in last Report has prevailed during this period, but has always terminated favourably in a few days.

DISEASES.	DISTRICTS. 1 S.W.	2 S.	3 S.E.	4 E.	5 N.E.	6 N.	7 N.	8 W.	9 Surry sideW	10 Surry sideE.	11 Hamp Highg	No. of Cases.	Fatal.
Anasarca	6	.....	.....	6	8	3	3	2	.....	1	.....	29	2
Ascites	2	.....	.....	2	2	1	.....	5	.....	.....	.....	12	1
Asthma	8	.....	1	4	13	11	36	9	2	.....	6	96	10
Acne	1	.....	3	.....	1	1	.....	.....	1	.....	.....	7	
Apoplexia	.....	.....	.....	2	4	1	.....	2	.....	2	.....	11	6
Aphtha	3	.....	.....	1	4	.....	2	7	4	.....	2	23	1
Amenorrhœa	4	1	1	2	5	.....	8	.....	3	.....	.....	24	
Asthenia	11	10	.....	8	19	4	7	6	5	.....	4	74	
Abortio	1	1	.....	1	3	.....	1	3	.....	1	2	13	
Bronchitis *acuta*	2	.....	2	.....	.....	.....	4	.....	.....	2	.....	10	1
——— *chronica*	3	.....	.....	.....	3	.....	2	.....	.....	1	.....	9	
Cancer	2	.....	.....	1	.....	1	2	4	.....	.....	.....	10	
Cephalæa	1	.....	.....	2	.....	1	.....	.....	1	.....	.....	5	
Chlorosis	4	.....	2	2	3	1	4	4	2	.....	3	25	
Cholera	5	1	5	3	.....	2	1	7	5	1	.....	30	
Chorea	1	.....	.....	1	1	.....	.....	.....	.....	.....	.....	3	
Cephalalgia	10	1	2	3	13	3	.....	1	6	4	4	47	
Colica	.....	.....	2	1	.....	7	5	7	3	4	3	32	
Catarrhus	58	12	14	16	13	7	51	31	11	10	18	241	
Convulsio	.....	.....	.....	2	1	1	.....	5	.....	1	3	13	2
Carditis	1	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	2	
Cynanche *Tonsillaris*	10	1	.....	7	6	1	7	10	6	6	9	63	
——— *maligna*	1	.....	.....	1	.....	.....	2	.....	.....	.....	.....	4	
——— *Trachealis*	1	.....	.....	2	1	.....	.....	.....	.....	.....	.....	4	
——— *parotidea*	3	.....	.....	.....	.....	5	1	.....	.....	2	.....	11	
Calculus *biliar*	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	
——— *urinar*	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1	
Diabetes	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	2	
Dysenteria	1	1	.....	.....	1	1	6	4	1	2	.....	17	
Diarrhœa	13	6	7	3	8	15	18	17	14	6	7	114	
Dyspnœa	11	2	1	.....	9	6	2	6	.....	.....	2	39	
Dyspepsia	18	13	6	20	21	10	15	15	16	8	16	160	
Dysuria	4	.....	.....	.....	3	.....	.....	1	.....	.....	1	9	
Eczema	.....	.....	.....	.....	1	1	.....	.....	.....	1	.....	3	
Erythema	1	.....	.....	.....	2	.....	3	.....	1	.....	.....	7	
Ecythyma	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1	
Erysipelas	7	3	5	3	2	4	8	11	4	2	2	51	1
Enteritis	3	4	.....	3	.....	.....	.....	1	.....	2	1	14	
Entrodynia	2	6	.....	.....	4	1	.....	6	2	4	3	28	
Epistaxis	.....	.....	.....	1	.....	.....	.....	.....	1	.....	.....	2	
Epilepsia	1	.....	.....	1	.....	.....	5	.....	.....	1	.....	8	2
Febris *remittens*	5	20	9	5	7	6	3	11	6	4	3	79	
—— *intermittens*	.....	.....	.....	2	3	1	1	6	2	2	.....	17	
—— *puerpera*	.....	.....	.....	.....	.....	.....	.....	1	.....	3	.....	4	
—— *synocha*	.....	2	.....	.....	.....	2	.....	.....	.....	.....	.....	4	
—— *synochus*	1	4	.....	.....	12	.....	.....	.....	2	.....	.....	19	
Gastritis	.....	.....	.....	2	.....	.....	1	1	.....	.....	.....	4	
Gastrodynia	9	.....	1	2	10	.....	6	3	4	3	5	43	
Hæmatemesis	.....	.....	.....	3	1	1	.....	.....	.....	.....	.....	5	
Hæmoptoe	2	2	.....	.....	4	4	2	.....	.....	1	1	16	
Hæmorrhois	.....	.....	2	1	3	.....	2	4	3	2	2	19	
Hepatitis	1	.....	.....	9	8	1	2	.....	2	4	.....	27	1
Hysteria	5	2	1	5	8	2	.....	1	4	.....	4	32	
Hysteritis	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	1	
Hydrencephalus	2	.....	.....	.....	.....	1	.....	3	.....	.....	.....	6	5
Hydrothorax	.....	.....	.....	1	2	1	1	.....	.....	.....	.....	5	3
Herpes	5	.....	.....	4	5	.....	2	2	3	4	5	30	
Hypochondriasis	.....	2	3	.....	5	1	3	2	2	1	.....	19	
Hernia	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1	

DISEASES.	DISTRICTS. 1 S. W.	2 S.	3 S.E.	4 E.	5 N.E.	6 N.	7 N.W.	8 W.	9 Surry sideW	10 Surry sideE.	11 Hamp Highg	No. of Cases.	Fatal.
Icterus	5	.....	.....	1	1	3	3	7	2	.....	.....	22	
Impetigo	.....	.....	.....	.....	4	1	2	.....	.....	.....	.....	7	
Ischuria	.....	.....	.....	.....	1	.....	2	1	.....	2	.....	6	
Lumbago	.....	.....	.....	1	4	.....	.....	.....	3	.....	.....	8	
Leucorrhœa	3	.....	.....	3	7	3	3	4	3	.....	3	29	
Lithiasis	1	.. ..	.....	1	1	.....	... ..	.....	.....	.....	.....	3	
Lepra	1	.....	.....	.....	.. ...	.....	.....	.....	.....	.....	.....	1	
Lichen	.....	.....	.....	.....	8	.....	.....	.....	1	.....	1	10	
Mania	.....	.....	.....	.....	1	2	5	.....	.....	.....	.....	8	
Menorrhagia	7	1	.....	4	3	1	4	3	4	4	2	33	
Miliaria	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	1	
Morbi *Infantiles**	10	6	7	4	27	15	24	32	16	23	7	171	1
——— *Biliosi*	40	8	19	19	13	9	11	40	11	18	9	197	
Neuralgia	.....	1	.....	.....	.....	.....	1	.....	.....	.....	.....	2	
Nephritis	2	.....	.....	3	.....	1	1	4	.....	1	.....	12	
Obstipatio	10	3	3	12	4	1	6	5	3	3	.....	50	
Ophthalmia	3	8	3	3	9	.....	7	11	4	2	4	54	
Odontalgia	.....	1	.....	.....	2	.....	.....	.....	.....	.....	.....	3	
Phlogosis	4	2	.....	1	3	.....	.....	1	.....	2	.....	13	
Paralysis	3	1	.....	5	7	3	9	2	.....	.....	.....	30	1
Phthisis *Pulmonalis*	4	.....	.....	6	8	2	22	6	.....	1	.....	49	14
Pertussis	5	4	5	1	.....	2	9	5	.....	.....	4	35	1
Peritonitis	.....	.....	.....	3	.....	.....	.....	1	.....	.....	.....	4	1
Phrenitis	.....	.....	.....	1	.....	.. ...	1	.....	.. ...	.....	.....	2	
Pneumonia	1	6	.....	9	12	11	18	13	5	4	4	83	5
Pleuritis	.....	1	.....	2	.....	1	2	1	.....	.....	.....	7	
Pleurodyne	.....	.....	.....	2	.....	1	2	.....	1	2	.....	8	
Podagra	5	.....	1	4	5	.....	5	4	2	1	1	28	
Porrigo *larvalis*	2	.....	.....	.....	3	3	1	.....	.....	.....	.....	9	
——— *scutulata*	3	.....	.....	.....	3	.....	2	.....	.....	.....	.....	8	
——— *favosa*	.....	.....	2	.....	3	.....	.....	.....	2	.....	.....	7	
Psoriasis	2	1	1	1	.....	.....	2	8	2	.....	.....	17	
Pemphigus	1	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	
Purpura	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1	
Pyrosis	3	2	.....	1	.....	.....	.....	.....	1	1	.....	8	1
Plethora	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	
Rachitis	.....	.....	.....	1	.....	.....	.....	2	.....	.....	.....	3	
Rheumatis. *acut.*	14	1	3	3	6	8	10	8	6	5	.....	64	
——— *chron.*	12	3	1	11	20	2	27	11	5	3	2	97	
Rubeola	7	2	2	8	.....	1	.....	.....	.....	2	.....	22	1
Scabies	2	.....	.....	6	7	14	33	8	4	3	.....	77	
Scarlatina *simplex*	1	1	.....	1	.....	4	2	4	.....	7	.....	20	
——— *anginosa*	.....	.....	.....	.....	1	1	1	.....	.....	2	2	7	
——— *maligna*	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1	1
Splenitis	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	1	
Scrofula	2	.....	1	2	9	.....	.....	2	2	3	.....	21	
Tabes *Mesenterica*	.....	.....	.....	.....	.....	.....	.....	1	.....	1	3	5	
Tetanus	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1	
Typhus	.....	... ..	1	.....	2	2	10	.....	2	3	.....	20	7
Variola	.....	5	.....	5	4	9	5	6	1	2	... ..	37	4
Varicella	1	.....	.....	1	.....	1	.....	6	2	3	.....	14	
Vermes	4	3	1	2	4	10	4	7	3	1	.....	39	
Vertigo	3	.....	.....	6	7	1	2	7	4	4	.....	34	
Urticaria	3	1	.....	1	5	2	.....	5	2	1	2	22	
Total No. of Cases	396	155	117	266	419	222	453	417	217	190	150	3002	
Total of Deaths	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	72

* *Morbi Infantiles* is meant to comprise those Disorders principally arising from dentition or indigestion, and which may be too trivial to enter under any distinct head; *Morbi Biliosi*, such Complaints as are popularly termed *bilious*, but cannot be accurately classed.

AN ABSTRACT from the REGISTER *of those* DISEASES *of* LONDON, *presumed to originate in, or be influenced by, the State of the* ATMOSPHERE, *with a* DIURNAL REFERENCE *to the* METEOROLOGICAL TABLE.

METEOROLOGICAL TABLE FOR LONDON,

From the 20th of FEBRUARY, to the 19th of MARCH, 1815.

M.	Therm.	Barom.	Hygrom. Dry.	Hygrom. Damp.	Winds.	Atmos. Variation.	D.
	45 50	29^{9}		10	W...	C...R..C...F..R..inN	20
	50 58 56	30		30	W...	R.C...C..F..	21
	55 53 48	30^{2}		2	NW...	C...C..F.C..F...	22
○	44 51 48	30^{2}	15		W..	C.F...F.	23
	47 52 49	30^{1}	20		W...	C...F...C...	24
	49 50 47	30^{1} 30	25		W...	C...C...C..	25
	47 50 43	30 30^{3}	35		SW..	C.R..F....	26
	38 43 42	30^{4} 30^{5}		10	W..	Fog.F...F....	27
	38 48 42	30^{5} 30^{5}	35		E..	Fog...F..F....	28
	40 49 48	30^{1} 30^{3}	5		EcS.	Fog..F...C..	1
◐	49 47 45	30^{2}	5		Wc	FogR..R.C...	2
	42 49 46	30^{2} 30^{3}		5	Wc	C....F....C...	3
	46 47	30^{2}	5		W.	C.C...C....	4
	48 53 49	30^{2}	20		SWc	C....C.C....R.	5
	45 54 46	30^{1}	22		NW.	C....F....F..	6
	47 49 51	30 29^{6}	20		S..SW....	C.R..C....R.. in N	7
	50 46 41	29^{4} 29^{6}		10	W...	R...R...F....	8
	40 46 45	29^{5} 29^{2}		10	SW..	C..R..C..C..	9
	36 45 34	29^{2} 29^{3}		15	NW..	Sn..F...Hail...F...	10
◑	35 45 38	29^{4} 29^{3}		10	NW..	C....F....Hail..F...	11
	38 46 45	29^{5} 29^{1}		6	SW.	C...R..R...F....	12
	41 47 40	29 29^{3}		7	W...	F...R...R...Hail...F.	13
	41 46 36	29^{6} 29^{3}		9	NW..	F....Hail.F....	14
	39 49 48	30 29^{8}	10	10	W.	C....R..C...R.. in N	15
	52 57 48	29^{7} 29^{8}			W...	R..F....C...	16
	42 56 45	30 30^{1}		6	NW..	C.F.F....	17
◑	47 52 49	30^{1}		10	NW..	C...C...R.	18
	51 54 51	30		12	W..	C...C.F.	19

	Asthma.	Apoplexia.	Bronchitis.	Cholera.	Cephalalgia.	Colica.	Catarrhus.	Cynanche.	C. Tracheadis.	Dysenteria.	Diarrhœa.	Dyspnœa.	Erysipelas.	Febres.	Hæmoptoe.	Morbi Biliosi.	Ophthalmia.	Paralysis.	Phthisis.	Pertussis.	Pneumonia.	Podagra.	Rheumatismus.	Rubeola.	Scarlatina.	Typhus.	Variola.	Varicella.	Vertigo.	Urticaria.
	1	—	—	1	3	—	4	3	—	1	3	1	2	5	1	7	2	—	1	1	5	1	4	2	2	—	1	1	1	—
	3	1	—	—	3	—	11	2	—	3	5	3	4	4	—	8	2	5	4	2	7	4	7	—	—	—	7	—	—	—
	5	1	1	2	3	3	11	2	—	1	7	1	3	2	—	9	2	2	3	—	3	—	6	1	1	1	1	1	2	1
	4	—	2	3	1	2	12	5	—	—	5	1	3	5	1	7	3	—	2	1	8	2	9	—	—	—	—	1	2	—
	5	—	—	—	2	4	11	4	—	—	10	3	4	9	—	6	2	—	1	2	3	1	4	—	3	2	—	—	—	1
	6	1	2	3	—	—	11	4	—	1	8	2	1	6	—	3	2	4	4	1	4	—	7	—	2	—	1	—	2	2
	2	1	—	2	—	1	4	3	—	—	6	2	1	5	1	1	3	—	—	1	2	1	3	1	—	1	—	2	2	—
	4	—	2	—	1	—	13	—	—	—	6	1	2	6	1	8	3	2	1	2	5	—	4	1	1	1	1	2	—	—
	7	1	2	1	2	3	8	3	—	2	7	5	3	5	2	11	5	2	4	1	3	2	9	—	1	2	—	—	3	2
	4	—	1	1	3	1	11	3	—	1	8	2	5	8	—	6	1	1	5	4	—	2	6	2	1	3	2	—	2	3
	3	—	1	3	2	—	8	5	—	2	4	—	—	3	—	9	4	2	—	1	3	1	10	—	2	1	3	2	2	—
	3	1	1	2	—	—	11	—	—	1	5	3	2	7	1	11	—	1	4	2	5	—	6	1	—	2	1	—	—	2
	5	—	2	—	2	3	14	4	—	1	5	1	2	3	1	9	1	1	3	2	4	3	8	—	1	1	2	—	3	—
	2	—	—	2	—	—	7	4	—	—	3	1	—	5	—	9	3	—	2	—	2	1	3	3	—	—	2	—	1	—
	4	—	—	—	1	3	10	2	—	—	—	—	2	2	—	6	1	2	2	2	4	—	9	—	1	—	—	—	1	—
	3	—	1	2	3	—	11	4	—	1	—	—	1	3	—	9	4	2	4	2	2	1	3	—	—	1	2	—	3	—
	4	—	—	1	3	1	14	5	—	1	4	2	1	3	2	8	3	—	1	—	—	—	5	1	2	—	3	1	1	2
	4	—	—	1	—	—	6	3	—	—	4	3	—	3	—	5	2	2	1	1	2	2	9	—	—	—	—	1	—	—
	6	—	2	—	3	1	10	3	—	—	3	1	3	6	1	6	2	—	—	1	5	—	5	—	1	—	4	1	—	1
	4	2	—	2	4	—	9	1	1	—	2	—	3	2	—	6	1	—	3	2	2	1	7	4	1	—	—	—	—	—
	2	—	—	2	—	2	5	4	—	—	3	1	1	5	1	8	—	—	—	—	1	2	3	2	1	—	2	—	—	1
	5	—	—	1	3	2	6	1	—	2	2	—	1	2	—	8	2	—	1	—	4	1	6	—	—	1	3	—	—	1
	2	—	—	—	—	2	6	3	—	—	2	2	1	5	—	5	2	—	5	1	4	1	9	1	2	2	—	2	—	—
	2	—	1	—	1	1	5	2	2	1	6	3	1	3	1	5	1	1	—	—	3	—	5	1	—	—	—	—	3	2
	2	1	—	—	3	—	4	—	—	1	—	—	1	5	1	11	1	—	—	2	4	—	5	1	4	1	—	—	1	1
	1	—	—	1	—	—	4	2	—	—	4	1	2	3	—	9	1	2	—	2	1	2	4	—	1	—	2	—	2	2
	3	2	—	—	4	2	8	—	—	—	1	—	1	4	1	5	—	1	—	—	2	—	3	1	—	1	—	—	2	1
	—	—	1	—	—	—	7	3	1	—	1	1	—	4	1	2	—	—	—	2	2	—	2	—	—	—	—	—	1	—
No. of Cases...	96	11	19	30	47	32	241	78	4	17	114	39	51	123	16	197	54	30	49	35	90	28	161	22	28	20	37	14	34	22
Fatal.....	10	6	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	1	14	1	5	—	—	1	1	7	4	—	—	—

Total of Cases,...1797. Total of Deaths,...52.

Princes Street, Cavendish Square.

Quantity of Rain from February 20, to March 19, one inch 8-100ths.

BILL OF MORTALITY *from February* 14, *to March* 14, 1815.

CHRISTENED.

	Feb. 21.	*Feb.* 28.	*Mar.* 7.	*Mar.* 14.
Males.....	218	217	219	227
Females.....	215	192	180	201
	433	409	399	431

Total.....1672.

BURIED.

	Feb. 21.	*Feb.* 28.	*Mar.* 7.	*Mar.* 14.
Males.....	201	166	152	157
Females.....	222	171	143	185
	423	337	295	342

Total.....1397.

OF WHOM HAVE DIED,

Under 2 Yrs..	102	83	99	84
btw. 2 & 5...	44	30	25	23
5 & 10...	14	17	12	18
10 & 20...	15	15	10	10
20 & 30...	36	26	19	24
30 & 40...	39	31	29	33
Small Pox.....	14	9	10	11

Betw. 40 & 50...	45	36	27	36
50 & 60...	40	35	23	41
60 & 70...	37	30	22	27
70 & 80...	28	22	18	22
80 & 90...	15	10	8	18
90 & 100...	8	4	3	6

— Total...44.

THE variations in the atmosphere in this interval, though never assuming the severity of winter, the stormy gales of March, or the softness of spring, in an extreme degree, have in some measure partaken of all. From the 20th to the 26th of February the temperature was mild and pleasant. From the 27th of February till the 15th of March, snow, hail, and gales of the season, in a degree, occurred, but within the limits of extreme violence. From the morning of the 16th of March to the 19th, the genial temperature of spring prevailed.

The whole of this month, as appears from the Bills of Mortality and our Reporters' Registers, has been remarkably healthy; which is most likely referable to the moderate temperature of the atmosphere during the period.

Almost every disease has diminished in the number of the cases and in the violence of the symptoms; and proportionally in fatality. Catarrhal and inflammatory affections of the pulmonary organs have naturally declined, as those transitions of heat and cold to which they owe their origin have abated. Hence, too, aged persons and children have been more free from complaints. *Phthisis*, it is true, is numerically higher in the list; but this disease being generally the *sequela* of some previous disorder, the date of its origin must always be looked for in antecedent registers. Thus, if we trace back,

we shall usually find, that when there is the greatest number of cases of Phthisis, there is the smaller number of deaths, and *vice versa.*

Apoplexia, though more rare, has been very fatal; six of eleven cases having proved fatal: a fact, confirming an observation, that determination to the head about the Vernal Equinox is more to be dreaded, and ought to be therefore guarded against by proper precautions, than at any other period of the year: although the effect of intense cold, as inducing apoplexy more frequently, has been reported on good information.

There are also fewer cases of *Hydrencephalus* (Hydrocephalus) in the present Register than usual.

Disorders of the *primæ viæ,* and of the hepatic functions leading to *Icterus,* have been common: but this consequence has often ensued from neglecting the first indications of a deranged action of the stomach and bowels.

Variola, Scarlatina, and *Erysipelas* are more frequent, and have been in many instances very severe. Six children died in February last from *Variola confluens maligna,* in the Tenth or Surry-side East District. Three of the victims belonged to one, and three to another neighbouring family. The disease was so malignant and rapid, that two graves divided the sufferers of both families. It is a melancholy reflection, that although gratuitous Vaccination had been offered the parents, yet it had been rejected. Happily, the instant and general adoption of Vaccination in the neighbourhood checked the progress of variolous infection; and the direful and spreading mischief ceased.

Typhus, in London, is on the decline; and in the Fifth District, in which it has been so long prevalent, it has nearly subsided: an event which we were led to anticipate, as most of the cases from the *gravior* had assumed the *mitior* character. But in many parts of the country, particularly in Cambridgeshire, we understand it is epidemic. Two of the fatal cases reported were those of children in the Tenth District. In one of the fatal cases in the Seventh or N. W. District, there were *petechiæ,* and large gangrenous spots with vesications; in another, of *Typhus catarrhalis,* it terminated about the fourteenth day in Hydrencephalus, which proved fatal in two days from its accession.

A case of *Cynanche maligna* occurred in a young gentleman of eighteen, who had left Cambridge on account of the epidemic fever which prevailed in some of the Colleges of that University. He had been three hours only in London when the Reporter visited him. He looked pale and bloated in the countenance, had head-ache and pains of the limbs, with a general feeling of fatigue; but complained of a swelling of the submaxillary glands of the right side, one of which was as large as a hen's egg, and very hard. He felt no difficulty of deglutition, nor complained of any uneasiness of the throat; but, on looking into it, it appeared inflamed, and the right tonsil presented an ulcer about the size of a sixpence covered with a white slough. The tonsils were very little enlarged; but the uvula was elongated, and, like the rest of the fauces, of a dull red colour. Pulse small, 120; tongue furred. He had occasional rigour, and expressed some alarm at the symptoms. A brisk emetic was immediately administered, which was followed by three grains of submuriate of mercury and an active cathartic.

15th. Better in every respect, tumour softer, ulcer nearly freed of the slough, fauces less red. The emetic and purgative acted briskly. Sensation of fatigue and head-ache gone; pulse fuller, 99; tongue much cleaner, no thirst. Took a draught every third hour in a state of effervescence, with lemon juice, containing carbonate of soda, infusion of serpentaria, and infusion of senna; he used a gargle with muriatic acid, and volatile liniment was applied to the tumour.

16th, 17th, and 18th. The fever has been gradually abating, and is now nearly gone; the throat is also clean, and the ulcer nearly healed; but the glandular tumour is rather larger and harder. The same course of medi-

cine has been pursued; but to-day it was considered adviseable to blister the tumour, which was accordingly done.

19th. The blister rose well; and the patient thinks the tumour is softer and smaller. He has since quite recovered; except that the tumour still remains indurated.

A woman, aged thirty-five years, died from a fit of *Epilepsy*, to which she was subject, brought on by passion. The case of *Psoas Abscess*, reported in the last Register, extending at that time beyond the reach of a probe in the direction of the muscle, and more than three inches down the thigh, has, within the last fortnight, been perfectly healed. The tumour pointed at the groin, and was opened by a small puncture. The discharge for several days was sanious. The patient was a spare and delicate young woman, the mother of three children; and from the time of the birth of the last child, about nine months ago, the origin of this disease is dated.

A delicate child, aged ten years, died of *Hydrencephalus*. She had been for some time wasting. The secretions of the stomach and bowels had been for some time deranged; her sleep unquiet, frequently talking and crying, and spirits much dejected previously to the disease taking a decided character. The left arm became paralysed for some days before death.

Examinations post mortem. — 1. In the last case, nearly two ounces of fluid were found in the ventricles of the brain. The pia mater covering the middle lobe of the right hemisphere was inflamed, with a considerable deposit of lymph on its surface, and all the blood-vessels of the head were extremely turgid. The spleen was also highly inflamed, and united by a thick kind of crust covering the whole upper surface to the diaphragm. — 2. *Aphtha*, in the fatal case, was in a child of seven months old. It had lately passed dysenteric stools. The œsophagus was covered with aphthous eruptions, the mesenteric glands were enlarged, and the internal coat of the small intestines much ulcerated. — 3. A case of *Hydrothorax* in a young woman of twenty-five years of age, who had anasarcous legs, terminated in inflammation of the pleura; her liver was found tuberculated. — 4. In a case of *Phthisis* that intervened on *Pneumonia*, the lungs were suppurated, the pleura was much thickened, and a great deal of water and loose coagulable lymph were in the cavity of the thorax.

Monthly Prices of Substances *employed in* Pharmacy.

		S.	*D.*
Acaciæ Gummi electf.	lb.	3	6
Acidum Citricum	- - -	34	0
—— Benzoicum	- - unc.	6	6
—— Sulphuricum	- P. lb.	0	8
—— Muriaticum	- - -	2	0
—— Nitricum	- - -	4	0
—— Aceticum	- - cong.	4	6
Alcohol	- - - M. lb.	4	6
Æther sulphuricus	- - -	10	6
—— rectificatus	- - -	12	0
Æruginis	- - - lb.	8	0
Aloes spicatæ extractum	- -	6	9
—— vulgaris extractum	- -	5	6
Althææ Radix	- -	1	3
Alumen	- - - -	0	6
Ammoniæ Murias	- - -	2	6
—————— Carbonas	- -	4	0
Amygdala dulcis	- - -	5	0
Ammoniacum (Gutt.)	- - -	14	0
—— (Lump.)	- -	4	0
Anthemidis Flores	- - -	2	3
Antimonii oxydum	- - - -	6	0
—— sulphuretum	- -	1	0
Antimonium Tartarizatum	-	6	6
Arsenici Oxydum	- - - -	1	0
Assafœtidæ Gummi-resina	- lb.	7	0
Aurantii Cortex	- -	4	6
Argenti Nitras	- - unc.	6	9
Balsamum Peruvianum	- - lb.	30	0
—— Tolutanum	- -	22	0
Benzoinum elect.	- - -	14	0
Calamina præparata	- - -	0	6
Calumbæ Radix	- - - -	3	6
Cambogia	- - -	10	6
Camphora	- - - -	8	6
Canellæ Cortex	- - -	7	0
Cardamomi Semina	opt. - lb.	2	0
Cascarillæ Cortex	- - -	3	6
Castoreum	- - - unc.	5	0
Catechu Extractum	- - lb.	2	6
Cetaceum	- - - -	2	9
Cera alba	- - - -	4	0
—— flava	- - - -	3	6
Cinchonæ cordifoliæ Cortex (yellow)		6	6
—— lancifoliæ Cortex (quilled)		10	6
—— oblongifoliæ Cortex (red)		16	0
Cinnamomi Cortex	- - -	20	0
Coccus (Coccinella)	- unc.	3	6
Colocynthidis Pulpa	- - lb.	9	0
Copaiba	- - - -	6	6
Colchici Radix	- - -	3	6
Croci stigmata	- - - unc.	5	0
Cupri sulphas	- - lb.	1	0
Cuprum ammoniatum	- -	4	0
Cuspariæ Cortex	- -	4	0
Confectio aromatica		12	0

		S.	D.
Confectio Aurantii	- -	3	6
—— Opii	- - -	5	0
—— Rosæ Caninæ	- -	2	0
—— Rosæ Gallicæ	- -	2	3
—— Sennæ	- - -	1	8
Emplastrum Lyttæ	- - -	7	6
—— Hydrargyri	- -	4	0
Extractum Cinchonæ	- - unc.	2	6
—— Cinchonæ resinosum	-	5	0
—— Colocynthidis	- -	3	6
—— Colocynthidis comp.	-	1	6
—— Conii	- - -	0	8
—— Elaterii	- - -	24	0
—— Gentianæ	- - -	0	6
—— Glycyrrhizæ	- lb.	4	6
—— Hæmatoxyli	- unc.	0	8
—— Humuli	- - -	0	6
—— Hyosciami	- unc.	1	0
—— Jalapæ	- 2*s.* 0*d.* Res.	3	6
—— Opii	- - -	3	6
—— Papaveris	- - -	1	0
—— Rhæi	- - -	2	6
—— Sarsaparillæ	-	1	4
—— Taraxaci	- - -	0	8
Ferri carbonas	- - - lb.	1	0
— sulphas	- - -	1	3
Ferrum ammoniatum	- - -	5	0
—— tartarizatum	- -	5	0
Galbani Gummi-resina.	- -	10	0
Gentianæ Radix	- - - -	1	3
Guaiacum	- - - - -	8	6
Hydrargyrus purificatus	- -	6	6
—— præcipitatus albus	- -	8	0
—— cum creta	- - -	6	0
Hydrargyri Oxymurias	- unc.	0	9
—— Submurias	- - -	0	9
—— Nitrico-Oxydum	- -	0	9
—— Oxydum Cinereum	-	1	4
—— Oxydum rubrum	- -	6	0
—— Sulphuretum rubrum	-	0	8
Hellebori nigri Radix	- lb.	2	6
Ipecacuanhæ Radix	- - -	18	0
—— Pulvis	- - -	19	0
Jalapæ Radix	- - - -	6	6
—— Pulvis	- - - -	7	6
Kino	- - - - - -	9	0
Liquor Plumbi Acetatis	- M. lb.	1	8
— Ammoniæ	- - - -	2	6
— Potassæ	- - - -	1	0
Linimentum Camphoræ comp.	-	6	6
Lichen Islandicus	- lb.	1	4
Lyttæ	- - - - - - -	14	0
Magnesia	- - - - - -	9	0
Magnesiæ Carbonas	- -	3	6
—— Sulphas, opt.	- - -	1	6
Manna optima	- - -	8	0
— communis	- -	5	0
Moschus pod, (30*s.*)	in gr. unc.	40	0
Mastiche	- - - - lb.	6	6
Myristicæ Nuclei	- - -	22	0
Myrrha elect.	- - -	8	0
Olibanum	- - - -	4	6
Opoponax	- - - -	26	0
Opium (Turkey)	- - -	36	0
Opium (East India)	- - -	37	0
Oleum Amygdalæ	- - lb.	4	0
— Anisi	- - - unc.	2	9
— Anthemidis	- - -	6	6
— Cassiæ	- - - -	8	0
— Caryophilli	- - -	5	6
— Cajuputi	- - - -	7	0
— Carui	- - - - -	1	9
— Juniperi Ang.	- - -	3	0
— Lavandulæ	- - -	4	6
— Lini	- - - cong.	6	0
— Menthæ piperitæ	- unc.	5	0
— Menthæ viridis Ang.	- -	4	6
— Olivæ	- - cong.	24	0
— Olivæ secundum	- 14*s.* to	18	0

		S.	D.
Oleum Pimentæ	- - unc.	6	0
— Ricini optim.	- (per bottle)	9	6
— Rosmarini	- - unc.	0	9
— Succini 2*s.* 4*d.*	—— rect.	4	0
— Sulphuratum	- P. lb.	1	6
— Terebinthinæ	- - -	1	3
— —— rectificatum	- -	1	6
Papaveris Capsulæ	- (per 100)	3	0
Plumbi Carbonas	- - lb.	0	8
— Superacetas	- - -	2	6
— Oxydum semi-vitreum	-	0	8
Potassa Fusa	- - - unc.	0	9
— cum Calce	- - -	0	6
Potassæ Nitras	- - - lb.	1	4
— Acetas	- - - -	9	6
— Carbonas	- - -	1	6
— Supercarbonas	- -	4	6
— Sulphas	- -	1	4
— Sulphuretum	- -	2	6
— Supersulphas	-	0	6
— Tartras	- - -	3	6
— Supertartras	- - -	1	6
Pilula Hydrargyri	- - unc.	0	9
Pulvis Antimonialis	- -	0	8
— Contrayervæ comp.	- -	0	6
— Tragacanthæ comp.	-	0	4
Resina Flava	- - lb.	0	5
Rhæi Radix (Russia)	- - -	40	0
—— (East India)	- -	16	0
Rosæ petal.	- - - -	9	0
Sapo (Spanish)	- - -	2	9
Sarsaparillæ Radix	- -	7	0
Scammoneæ Gummi-Resina	- unc.	3	0
Scillæ Radix siccat	- - lb.	5	6
Senegæ Radix	- - -	5	0
Sennæ Folia	- - -	7	0
Serpentariæ Radix	- -	34	0
Simaroubæ Cortex	- -	4	6
Sodæ Boras	- -	4	0
— Sulphas	- - -	0	10
— Carbonas	- - -	8	0
— Subcarbonas	- -	1	8
— — exsiccata	- -	5	0
Soda tartarizata	- -	3	0
Spongia usta	- - - -	20	0
Spiritus Ammoniæ	- M. lb.	4	0
— —— aromaticus	-	4	0
— —— fœtidus	- -	4	0
— —— succinatus	-	5	0
— Cinnamomi	- - -	3	0
— Lavendulæ	- - -	5	6
— Myristicæ	- - -	3	6
— Pimentæ	- - -	3	6
— Rosmarini	- - -	4	0
— Ætheris Aromaticus	- -	7	0
— — Compositus	- -	6	6
— — Nitrici	- -	4	0
— — Sulphurici	- -	6	6
— Vini rectificatus	- cong.	28	0
Syrupus Papaveris	- - lb.	2	0
Sulphur	- - - -	0	8
— Sublimatum	- -	0	10
— Lotum	- - -	1	2
— Præcipitatum	- -	1	2
Tamarindus opt.	- - -	2	6
Terebinthina Vulgaris	- - -	0	10
—— Canadensis	- -	7	6
—— Chia	- - - -	9	0
Tinct. Ferri muriatis	- -	5	6
Tragacantha Gummi	- - -	7	0
Valerianæ Radix	- - - -	1	6
Veratri Radix	- - - -	1	6
Unguentum Hydrargyri-fortius	-	5	6
—— —— Nitratis	-	2	8
—— —— Nitrico-oxy.	-	3	6
Uvæ Ursi Folia	- - -	3	6
Zinci Oxydum	- - -	6	0
— Sulphas purif.	- - -	2	6
Zingiberis Radix opt.	- - -	5	6

Prices of New Phials per Gross.——8 oz. 70*s.*—6 oz. 58*s.*—4 oz. 47*s.*—3 oz. 43*s.*—2 oz. and 1½ oz. 36*s.*—1 oz. 30*s.*—half oz. 24*s.*——The London Glassmen allow 10 per Cent, ready money.——The Manufacturers in the Country, where all Phials are made, allow 27½ discount, at three months credit, (carriage free,) to London.

Prices of second-hand Phials, cleaned, and sorted.——8 oz. 46*s.*—6 oz. 44*s.*—4 oz. 35*s.*—3 oz. 30*s.*—2 oz. and all below this size, 25*s.*—Three months credit.

Best Leeches, 2*s.* Bourdeaux Leeches, 4*s.* per dozen at Covent Garden Market.

MONTHLY CATALOGUE OF BOOKS.

Mineralogical Nomenclature, alphabetically arranged. By Thomas Allan. 8vo. Longman and Co.

Physiological Researches on Life and Death. By Xav. Bichât. Translated from the French, by F. Gold. 8vo. Longman and Co.

A Treatise on the Diseases of Arteries and Veins, containing the Pathology and Treatment of Aneurisms and Wounded Arteries. By Joseph Hodgson. 8vo. Underwood.

Engravings, intended to illustrate some of the Diseases of Arteries. By Joseph Hodgson. 4to. Underwood.

Practical Observations on Necrosis of the Tibia. By Thomas Whately, Esq. 8vo. Callow.

A Treatise on Puerperal Fever. By William Hey, jun. Member of the Royal College of Surgeons, London. 8vo. Longman and Co.

A Treatise on Fever. By William Stoker, M.D. Dublin. 8vo. Longman and Co.

INDEX INDICATORIUS.

We have to acknowledge communications from Mr. Gaitskell, Mr. Sweeting, Mr. Want, M. B. &c.

An Inquirer *is informed, that the* London Society *for the* Relief *of Widows and Orphans of* Medical Men, *does not extend admission to Subscribers residing above seven miles from the Metropolis.*

Many complaints have been made to the Editors *from Gentlemen, who, in consequence of the Notice inserted in the* Repository *of last month, attended at* Apothecaries' Hall, *and were refused admittance. The* Editors *can only regret the circumstance; and observe, that* they *received the Notice in question from the Hall; and that a similar one appeared in the* Philosophical Magazine. *But they understand notices were affixed at the entrance, stating a reason for the disappointment.*

It is with extreme concern we learn the continued mortification the Subscribers *to the* Repository *in* Ireland *are exposed to, from the irregularity of its delivery. The cause lies not with the* Editors, *but in the deranged state of the affairs of our Publishers' late Agent in Dublin.* Mr. J. Cumming *being now appointed, it is hoped there will be no further occasion for complaint.*

CORRIGENDUM.—By a slip of the Printer's form, all the figures for *Deaths*, in the second column of *Fatal* in the last month's Register, are arranged one line too low. In reading they must be placed against the disease above them.

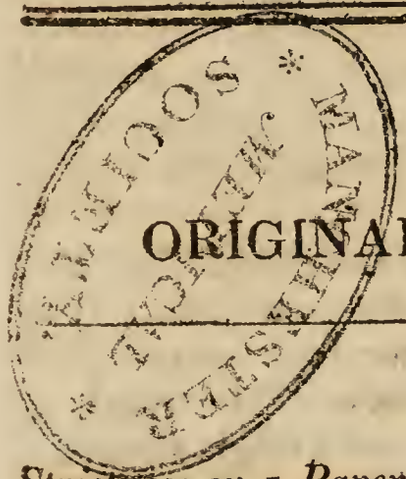
This Publication, by application to the Clerks of the General Post Office, or if previously ordered of the Post Masters, will be sent to any of the British Colonies or Foreign Countries, upon the same terms as other Periodical Works.

Communications intended for insertion in the subsequent Number, should reach us before the 12th of the month. They are respectfully solicited, and should be addressed (free of expence) to Mr. Burrows, *Bloomsbury Square: by whom Books for the Review Department, Articles of Intelligence, &c. &c. will also be received.*

THE

LONDON MEDICAL REPOSITORY.

No. 17. MAY 1, 1815. Vol. III.



PART I.

ORIGINAL COMMUNICATIONS.

I.

Strictures on a Paper published in the London Medical Repository, *April* 1815, *intitled "Observations on the Cæsarean Section, and Premature Delivery, by* Ωδινοβοηθος;" *with Observations on Professional Character and Medical Responsibility.* —By a Surgeon.

"Est modus in rebus."—*Horace.*

The promoters of Medical Knowledge, if they are sometimes compelled to lament the injuries done their art by the waste of time and talent in idle controversies, must more frequently rejoice at the successful use of the *Novum Organum*, and the exercise of impartial criticism on productions which might possibly tend to deteriorate, in the public eye, the value of judicious practice.

We live now at an era in the history of science, in which we are surrounded by a generation of periodical writers and of watchful observers; and we must confess that we are often indebted to them for the publicity of insulated, but highly important facts; which would be lost to science without their arresting energy, and for the exercise of much useful animadversion. The man who communicates a successful method of practice, performed on rational principles in any case worth observation, is unquestionably entitled to the thanks of the community; and not less so is the man who relates a failure of his, not always, "all potent art;" for although there may be a more scanty offering of incense to the vanity of human nature, or the

pride of professional eminence, there will be the larger portion of praise to purity of motive.

The healing art is silently advancing towards perfection, in spite of the opposition of ignorance; of empyricism; of popular and vulgar prejudice; of a prevailing disposition to undervalue the labours of the Faculty, and to seize upon any thing like error, and exhibit it to their disadvantage, or to imply error and incapacity where they do not exist; and last, but not least, of a cause not less injurious than any of the former to the honour and dignity of the art, existing amongst its own professors—the jarring of interests,—disunion of views,—individual detraction, —illiberal opposition, and anxious rivalship: not in scientific attainment and professional enthusiasm; but in the art of getting patients, and of absorbing by every means as much practice as possible.

Zeal for the honour of the profession is most laudable. Medical men, however, do not seem to be fully aware, that very frequently the affectation of zeal for science may cover either overbearing vanity or personal invidiousness. The mask of zeal may serve to cover personal design: and a single sentence, even by implication, may permanently injure the practical celebrity of very worthy and competent practitioners.

I would by no means wish to deter any individual from the exercise of his judgment, on any statement of facts, or detail of practice offered to the public eye. The man who, dissatisfied with what he reads, takes up his pen, and boldly gives to the world his opinions, is more to be praised than he who, in private society, with a placid smile,

"Just hints a fault, and hesitates dislike:"

and both are preferable to the writer who attempts to conceal his severity by a thinly woven cobweb of softened phraseology.

I offer these remarks generally, and for the real honour of medical art; and having premised this much, let me now acknowledge, that these reflections form part of a train excited by the perusal of a paper in the last month's *Repository*, signed Ὠδινοβοηθος. I do not assert that all these reflections apply to that paper, and to its anonymous author; but I leave it to him and to your other readers, to apply just as much of them, as the apparent tenor of the production induces them to think applicable.

After perusing and re-perusing that paper from the beginning to the end, it appears to me to have been evidently written with a design to prove, that the doctrine taught by Dr. Clough, in

his paper, is immoral; that it countenances illegal practice; that he would have put that illegal practice in force in the individual case he details; and that had he done so, the woman had an equal chance of dying, and the child no better one of living; but that her death was caused by an accidental unforeseen circumstance, unconnected with either the doctrine or the practice animadverted on.

These are the only general conclusions I can possibly draw from the paper.

Such conclusions, if the premises from which they are drawn are established in truth, are highly injurious to the reputation, and trying to the feelings of any individual. It is, however, my opinion, that they are not drawn from a correct view of the data on which the paper is founded; that the writer has given the highest possible colouring to the whole; and that his paper, instead of being, as he states, "observations thrown hastily together," exhibits every feature of an elaborate production.

I shall begin with quoting what he says respecting the cæsarean operation, generally, and particularly in this instance.

"It is, I apprehend," says he, "attempted to be proved by this case:

1st. That sometimes the cæsarean operation is to be preferred to the operation of perforating the head of the child; and that in the woman who is the subject of this case, such an operation would have been expedient." And he afterwards proceeds to observe: "I am not at all inclined to question the propriety of sometimes having recourse to the cæsarean section, because it has been proved, that there are women with pelves so extremely distorted, as to render the delivery with the perforator and hook impossible; and, consequently, no other means of bringing the child into the world remain but by this operation. When, however, it is recollected, that with scarcely a single exception, this dreadful operation has in England proved always fatal to the mother, it is impossible to contemplate it without horror, or to recommend it, except in cases of the most urgent necessity. But in the case before us, did this necessity exist?"

"We are told that 'the pelvis was preternaturally small, but not distorted.' Are there any cases of preternaturally small, *but not distorted pelves*, in which the cæsarean section can be necessary or justifiable?"

Your correspondent has done any thing but given force to the suggestion, that no necessity existed in this case for the cæsarean operation; for, after stating the constant fatality of

the operation in England, and observing "that it should not be recommended except in cases of the most urgent necessity," he asks: "but in the case before us, did this necessity exist?"

I feel convinced that the greatest necessity for the operation in this very case was proved by the death of the patient. The fœtus was wedged in a pelvis preternaturally small, without any practicability of extracting it even after the operation of cephalatomia; and uterine action was unavailing. If the cæsarean operation be defensible on *any* grounds in this country, it would have been so in this case. The only chance for life within the limits of probability, or even possibility, was the extraction of the fœtus by the cæsarean section; for turning and extraction by any other method were alike impracticable. As to the question, "are there any cases of preternaturally small but not distorted pelves, in which the cæsarean section can be necessary or justifiable?" I shall submit an observation to your readers, that the case in question was a case of preternaturally small, although not distorted pelvis, where the cæsarean operation would have been justifiable in consequence of the impracticability of turning the fœtus or extracting it, after the operation of cephalatomia had been performed; and the increasing exhaustion of the patient.

The cæsarean operation, although it has always failed in these islands, yet has *not always* failed on the Continent. What is the reason of this? No person, I presume, can do more than form a conjecture regarding it. If a successful instance of the operation should occur here, it might be as difficult to say why it succeeded, although I cannot help thinking, that the *possibility* is, that a comparison of all the circumstances attending the case, with the fatal ones which preceded it, might tend to throw light on this awful subject; and that one instance of success would be the precursor of many.

As yet, I cannot see sufficient reason for neglecting the operation in every case; for we have not arrived at the undeniable conclusion, that it never will succeed in any case in England; and in all the cases where it becomes justifiable, the death of the mother must inevitably follow its rejection, while its adoption holds out a small degree of probability of saving her life, and a great one of saving the life of the child, if it be early performed.

In cases of actually distorted pelves, where, *a priori*, the dimensions are known or approximated, the sooner the operation is performed the better. Indeed in such cases, where no possibility of getting the fœtus through alive or dead exist, would it not be preferable to perform the operation before the full period of delivery, uterine action not having commenced

at all? for I can hardly avoid thinking, that delay in performing this operation, in cases where other ineffectual attempts at delivery have been made, may be the cause of its having proved unsuccessful. But I hazard this opinion merely as a query.

Respecting this operation, and a point of moral right involved in it, and of law, which, if not in existence, might arise out of the circumstances I am about to mention, I shall offer a question:

Suppose the operation, from its alledged uniform fatality, were to be abandoned altogether; or suppose that it was considered as much certain death to the mother as the impossibility of delivery by art, then a woman with a pelvis distorted to the utmost, is consigned to certain destruction in the event of her pregnancy, unless abortion be procured before the fœtus shall have arrived at an age capable of surviving to maturity, or even of being born alive. Now as this *is* the fate of almost every woman so situated, is it more justifiable in a *moral* point of view, to suffer her to die, than to procure abortion before, or even after she has quickened? Or if she were fortunate enough to survive the operation once, would it be justifiable to let her run the risk of death again, when, by procuring abortion, her life might be saved? If there should exist a law, making it a capital offence to procure abortion in this case, I cannot bring myself to pronounce it morally just; and if such a possible case as I have supposed be not excepted, it must be included in the law to that effect. The consideration of right in all things must be preferred to expediency; and though it may not be expedient, yet is it right in all and every possible case involving the inducing abortion to avoid destroying a living fœtus, to save the life of perhaps a valuable and (as far as moral conduct and relations go), an upright member of society*?

"Unless," continues your correspondent, "the deviation from the size of a well-formed pelvis be very great, it would be desirable to let a fortnight or more elapse, after the seventh month of gestation is completed, before labour be artificially excited. In this very case it appears, that when the pains of labour came on, the pelvis was sufficiently large to admit both arms and one leg to pass through it, and yet there was still room for the head to be strongly wedged in the brim; may it not then have been safely inferred that there would have been space sufficient for a child of this growth to pass, had the pre-

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* It is on this expediency of suffering positively a few small evils to occur to prevent, not the certainty, but the chance of many great ones, that the law would be general in this case.

sentation been natural?" To this I reply, that the deviation from the natural size in this pelvis was very considerable; that a fortnight's growth at this period of utero-gestation may prove a great impediment to the delivery of the child alive through such a pelvis; that if thirty-one weeks* of utero-gestation be completed, the child does not stand so very small a chance of surviving to maturity as the writer suggests; and that "from the impossibility of getting the hand into the uterus from the narrowness of the pelvis, (to use Dr. C.'s own words) to bring down the lower extremity; the probability is, that labour, excited a fortnight sooner, might have admitted, even in the event of mal-presentation, of returning the extremities and introducing the hand; nor do I think that, all things considered, "we may safely infer that there would have been room for a child of this growth to pass, had the presentation been natural."

Again, "The poor woman, it is said, fell with child about the beginning of February 1814; and on the 25th of September the labour was artificially induced, a period of, at the utmost, thirty-three weeks and six days, but probably not so long, as the above reckoning was made from the beginning of February; was this too long to wait before labour was artificially brought on, in a pelvis preternaturally small but not distorted?"

Now I do beseech the reader to observe the tenor of this sentence, "a period of, at the utmost, thirty-three weeks and six days;" how much does that time want of thirty-four weeks? One day certainly; but ninety-nine pounds nineteen shillings has not on the *ear* the sound of one hundred pounds, although it is that sum minus only one shilling. The writer adds, "but probably not so long." Why? I may with as much certainty say, but probably longer, as women err in their calculations one way as well as another; and this gives more strength to Dr. Clough's conjecture of the possibility of that step having been too long delayed (meaning premature labour): and with regard to the general principle of inducing premature labour, I candidly confess, that an error in favour of the mother regarding the precise time of inducing it, is much more venial than one designedly in favour of the child, but tending to injure both the mother and the child.

The writer of the paper now before me says, "that the principle of saving the life of the child is as much set at nought by

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* Dr. Clough's patient had completed positively thirty-four weeks, minus one day, and probably thirty-five full weeks; if so, she still would have completed thirty-two weeks, had delivery been accomplished artificially three weeks before it was excited.

inducing labour too soon as by delaying it too long;" or, in other words, by bringing the child into the world incapable of living, and bringing it into the world dead. This unquestionably is as true as it is possible for a truism to be; but I do conceive that, the character and the responsibility of the practitioner being taken into account, with the circumstances of the patient's health, and the probability of the child being very large, a fact which must be decided by the pelvis being small, a short delay may prove highly injurious; and the risk of that injury is heightened by the chance of erroneous reckoning on the part of the woman.

I shall offer no further remarks on the practical part of this paper. Let readers form their unbiassed judgment on what I have advanced, which they will do the better, from not knowing the names of the writers either of the observations or these strictures. But I have another part of my design to fulfil —to offer some observations on Medical Responsibility; and on what Ὠδινοβοηθος advances respecting moral conduct and legal opinion.

"In reference to this subject," says the writer, "it is proper for all practitioners of midwifery to understand exactly how they would be affected by the law relative to the criminally procuring abortion."

What, I demand, has the criminally procuring abortion to do with Dr. Clough's case, or this writer's remarks on it? I know not whether Dr. Clough was acquainted with the *lex scripta*; but his acquaintance with it could not have influenced his practice. I sincerely hope that the medical profession has no members belonging to it who require or care to know this law; and I am sorry your correspondent should have sullied your pages with the word *criminality*. Who will thank him for letting him know the *lex scripta* in this case? Who so criminal? And how can the knowledge of this law concern a responsible person, acting up to his judgment and to the rule of rectitude?

Again—"The inducement of premature labour is a practice valuable or otherwise, exactly as it is properly or improperly undertaken." No one can doubt this. It is another undeniable truism. "In the hands of a discreet and upright Accoucheur it may be productive of much public and private benefit." So, the writer allows this; but does he really mean, that unless this discreet and upright Accoucheur know the *lex scripta*, his discretion and his rectitude may answer no other end than, some day or other, to get his neck into the pillory? Now he does, he must mean this; or else he must mean, that Dr. Clough is among those referred to in the next sentence: or

why say, in one person's hands it may do *good*—in another's, *harm*—and yet plainly tell us, that it is requisite *all* should know the sentence of pillory and death? I shall thank any correspondent, if he can, to extricate the author of the paper out of *this* dilemma. I cannot, I will not think that our profession contains any such unprincipled, although it may many inexperienced persons. "It behoves all," he again observes, "who are engaged in obstetric practice, to understand fully the principles of this method, that it may never be adopted but upon right and proper occasions; and they ought to know (what, I presume, few of us do) how the laws respecting the crime of procuring abortion apply to this practice, in the event of an appeal to a magistrate."

The principles of the method, I believe, are known to every practitioner acquainted with the method. But as to "few of us" knowing how the laws apply, &c. I must say that it matters not how they apply. I, for one, am not a jot the wiser for any thing your correspondent has told me; nor do I think it worth knowing or inquiring into. If ever any practitioner procure abortion to answer any disgraceful end, let him be punished as he deserves. The law, in my opinion, applies to motive; and if it does not, in this case, as clearly as in murder, or manslaughter —it is a *blemish* in the law.

The information given us respecting the pillory is requisite for only two classes of persons—I trust neither exist amongst us—knaves and fools; for who but a knave would require to be told of the pillory, lest he should apply premature labour to disgraceful purposes? and who but a fool would so err as to involve his reputation, and be incapable of defending himself legally, whether he knew it or not? That the breach of enacted laws is punishable of course in *medical* men as well as in others, I grant; but there is surely very little chance of men, whose fame, whose fortune, whose peace of mind, depend on a fair character, prostituting such a principle as the one under discussion for disgraceful purposes.

When the College of Physicians confer a degree and power to act professionally on an individual, he becomes most responsible:—first, to the laws, as a matter of course; then, to domestic society; and, lastly, to his own conscience. But the more you detract from the latter high and solemn responsibility, the more you lessen the energies of the mind, freeze the "genial current" of noble and virtuous emulation! The more you make a man ponder and muse upon his amenability to law, the more narrow and confined are all his energies. Whilst a good and great man obeys the laws, because the breach of them is foreign to his heart, he, in addition to the tribunal erected for the

immoral, builds one in his own breast, and beholds one formed for him in the breasts of his fellow brethren of mankind. "I stand up for law," says Shylock. Shylock had the letter, but nothing else*.

I now close the subject. My strictures may appear severe, but I trust they cannot be regarded as undeserved.

II.

Five Cases of Puerperal Fever successfully treated, with Remarks. By WILLIAM GAITSKELL, Rotherhithe, Member of the Royal College of Surgeons, and of the Society of Apothecaries, London.

THE great number of cases of puerperal fever which have lately occurred in various parts of England, have particularly directed the attention of practitioners to the investigation of the pathology of that disease, and to the establishment of a more decisive method of cure than was formerly pursued. The following cases are chiefly interesting on account of the success of the treatment; and their principal merit is that of truth.

CASE I.

On Saturday, the 18th of February last, about two o'clock in the morning, I was called to attend Mrs. B., a young woman of tender health, in labour of her second child. The labour, which terminated in the space of an hour, was natural; the child alive, and healthy; and, in a few hours afterwards, it was put to the breast, and sucked without inconvenience to the mother. The patient was ordered barley water, plain grit gruel, veal, chicken, or beef tea, as diet; with a cool room, and quietness.

19th. The after-pains were troublesome; but the lochia flowed properly, both in quantity and colour. To relieve the pains, I directed my attention to the bowels, and ordered the following pills:

℞ Pulveris Jalapæ,
Extracti Colocynthidis comp. āā ʒss.
Aquæ q. s. ut fiat massa, in pilulas xij. dividenda. Capt. ij tertiis horis donec alvus responderit.

After taking three doses, two dark-coloured fœtid stools

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* We must acknowledge that we do not clearly comprehend the force of our correspondent's observations on the cautions of Ὠδινοβοηθος regarding the law relative to procuring abortion. The knowledge of law does not entail a stigma upon honourable men; and there have been instances of medical practitioners rendering themselves amenable to the penalties of this law.—EDITORS.

were procured. The pulse was 80; the head free from pain; the skin moist; the tongue clean; the bladder relieved; and the after-pains abated.

20th. About two o'clock in the morning, forty-seven hours after delivery, she was suddenly attacked with a shivering fit, followed by fever; a distracting pain in the head, and tenderness in the left hypochondrium, which in a short time increased to acute pain, extending to the groin and the navel. The pulse beat 120. The lochia were diminished, but not suppressed. I immediately abstracted sixteen ounces of blood from the arm; and as two stools only had been procured by the pills, the following mixture was prescribed:

℞ Sodæ Phosphatis ʒss.
Syrupi Rhamni,
Tincturæ Sennæ āā fʒss.
Infus. Sennæ fʒivss. Fiat mistura, cujus capiat cochl. larg. ij. 2da quaque hora, donec alvus soluta fuerit.

The third dose operated, and removed from the bowels three dark-coloured, slimy, offensive stools. The abdomen was then fomented with flannels wrung from hot decoction of chamomile flowers; and glysters of gruel injected, as emollients. In six hours more, the pulse rose to 130, when the bleeding was repeated, and the purging mixture ordered to be given every four hours. In the next six hours three more stools were procured, similar to the former; but without the wished-for relief. The pulse now rose to 140. The abdominal pain was more diffused; but the head relieved. The bleeding was repeated to the amount of sixteen ounces; and the purgative mixture continued until several stools were evacuated, which mitigated the symptoms, and in six hours more brought the pulse down to 130. The bleeding being again repeated, reduced the pulse to 120, with great relief to the abdominal pain, as well as the affection of the head. A slight cough now, however, intervened, which added greatly to the sufferings of the patient; who was forced to incline on her back, no other position being practicable.

22d. Wednesday evening. The pulse being still 120, the skin hot, the tongue furred, the abdomen tender, and cough troublesome, I repeated the bleeding, purging, and glysters, which reduced the pulse to 110. The bleeding was nevertheless again had recourse to, being the sixth time, when the pulse sunk to 90, with an abatement of every dangerous symptom.

The bowels were now kept in action by sulphate of magnesia given every four hours, in doses of ʒij. dissolved in infusion of roses; which procured six stools a day, of better appearance; and, by the 8th of March, complete convalescence took place, and a gradual recovery of health.

The blood, which was drawn, was firm, and highly inflamed,

excepting the last quantity, the crassamentum of which was loose in texture, and the crust of a greenish yellow hue.

Case II.

Mrs. A., a healthy young woman, about twenty-six years of age, living in the same court with Mrs. B., was delivered about eleven o'clock in the forenoon of the same day, Saturday the 18th of February. This was her second child. The labour was natural and easy; and on the following Sunday she had every symptom of doing well; but on Monday a slight febrile attack ensued, with trifling pains in the hypogastric region, which I attempted to remove by purging. For this purpose, she took two large spoonfuls of the saline senna mixture every three hours. The second dose operated, and four dark-coloured offensive stools were procured. The same evening, about fifty hours after delivery, a shivering fit occurred, followed by fever, with violent head-ache and increase of abdominal pain. The pulse was 120. To arrest the threatened mischief, I instantly abstracted sixteen ounces of blood from the arm, gave her three grains of calomel with fifteen of jalap; and afterwards several doses of the purging mixture, exhibiting emollient injections, and applying fomentations. Next morning, Wednesday the 22d, the pulse having sunk to 100, the action of the bowels was kept up by moderate doses of sulphate of magnesia, until Sunday the 26th, when the pulse was reduced to the natural standard. Convalescence now took place, and the strength of the patient was gradually recruited.

She remains in health, and is an excellent nurse to her child.

Case III.

Mrs. B., sister-in-law to Mrs. B., (Case I.) residing within a few doors of her house, was brought to bed on the 28th of January last. The labour was natural and of short duration. She continued doing well until the 3d of February, when a severe attack of pain seized her in her right side, with cough and difficulty of breathing. These symptoms she attributed to cold. One bleeding, followed by purging with calomel and jalap, aided by fomentations, removed the whole of her ailments.

February 27th, three weeks after this attack, she had a shivering fit, followed by fever, accompanied with violent head-ache, pain in the right hypochondrium, paucity of urine, diminished secretion of milk, and costiveness. The pulse was 120. She was first freely bled, then purged with calomel and jalap, fomented, and afterwards kept on the lowest regimen. On the following day the bleeding was repeated; and on the 4th of March, six days from the seizure of the symptoms, convalescence ensued.

Case IV.

Mrs. D., a lady in a tolerable state of health, was brought to bed of her fourth child about three o'clock in the morning of the 25th of March last of a girl, after a short, but sharp labour. The case was footling. On the following day, the after-pains being unusually troublesome, she was ordered to be purged with phosphorated soda and infusion of senna, which in six hours operated freely, and produced some alleviation of pain. About one o'clock of the morning of the 27th, she was seized with a shivering fit, sharp pain in the umbilical and hypogastric regions, suppression of the lochia, high fever, with the pulse 130, great thirst, and the secretion of milk suppressed. I took sixteen ounces of blood from her; and Dr. Haighton was requested to meet me in consultation. It was agreed to continue the purging. In the evening, although several dark-coloured and offensive stools had been procured, yet the frequency of the pulse was undiminished: the bleeding was therefore repeated. Next day, the 28th, the symptoms were mitigated, and the pulse was only 110; but another bleeding was thought to be adviseable, with warm fomentations to the bowels. At the same time, in order to promote the intestinal action, sulphate of magnesia was prescribed in doses of one drachm given every four hours. By these means twelve evacuations were procured daily, which diminished the frequency of the pulse, and lessened the pain and febrile symptoms.

The head was but slightly affected; but the patient complained of being greatly confused. On the 29th and 30th the pulse was at 100, with diminution of abdominal pain, less confusion of the head, abundant secretion of milk, and an appearance of the lochia; but on the 31st, the abdominal pain returning, with great sense of soreness, the bleeding was repeated; by which means the pulse was reduced to 80, with complete remission of pain.

During the whole of her illness the patient inclined on her back, no other position being tolerated.

As the stools continued bilious, dark-coloured, and highly offensive, attended with thirst, and occasional flushes of heat, some doses of calomel and jalap were administered, and the saline purgatives continued at more distant intervals, until the alvine secretions changed, and convalescence ensued. These desirable results, however, were not accomplished till April the 12th, being sixteen days from the commencement of the attack.

Case V.

Mrs. A. was brought to bed of her sixth child, on the 27th of last March. Nothing peculiar attended the labour. About a month prior to her confinement, however, she laboured under

hepatitis, for the relief of which she was three times bled from the arm, had leeches and blisters applied to her side, and was confined to the strictest antiphlogistic regimen; while calomel and salts were exhibited internally, for the removal of the morbid secretions.

On the 28th, the day after her labour, she was gently purged with phosphorated soda and senna. On the 30th she was attacked early in the morning with a shivering fit and pain in the head: the pulse was 130; there was acute pain in the umbilical region, with a diminished secretion of milk, and of the lochical discharge. The symptoms were so pressing, that, notwithstanding the previous bleeding, I took two pints of blood from her arm in the day, with great relief to the symptoms. As a troublesome cough supervened, and two days afterwards (April the 1st) there was an accession of fever, I was induced to repeat the bleeding; at the same time the saline purgatives were continued without intermission. Under this treatment a favourable change took place on the 4th of April; and a speedy convalescence followed.

The patient is now completely recovered, having no other complaint than weakness.

REMARKS.

The principal feature in these cases, and some others formerly reported by me in the *Repository**, is their favourable termination under the antiphlogistic treatment. The venesection employed at the outset, and repeated according to the urgency of symptoms, arrested the immediate progress of the disease; while active purging accomplished the cure. This plan of treatment has been equally successful in the hands of other practitioners, as is evinced by the publications of Dr. Gordon of Aberdeen, Dr. Armstrong of Sunderland, and Mr. Hey, junior, of Leeds.

As puerperal fever has within the last four years extended its ravages in the North, and is now spreading its destructive influence in the South, the discovery of a method to arrest its progress becomes an object of the first importance. The primal consideration for inquiry is, whether the disease be contagious? On this subject professional men differ.—My own opinion is, that this disease is highly contagious; and my cases are in proof of my opinion. But there are other facts more strikingly convincing. —Professor Young, of Edinburgh, was so satisfied of the contagious nature of puerperal fever, from the circumstance of every new patient admitted into the Infirmary becoming infected, that he was obliged to clear all the wards, have them white-washed,

* Vol. ii. p. 357.

ventilated, and dried with stoves; after which the disease ceased to make its attacks. In addition to this evidence may be added that of Dr. Haighton, who was so convinced of its infectious power, that, when it prevailed in his lying-in-house, he was under the necessity of interdicting his pupils from visiting out-door patients, to prevent the propagation of the virus. None but pregnant women were under its influence; and if they were admitted a month or six weeks before the termination of pregnancy, they were sure to fall sick a few days after their confinement. It appears, therefore, that the effluvia of a patient under puerperal fever is an animal poison *sui generis*, capable of acting on pregnant females, their situation giving the predisposition necessary for the operation of its influence.

Whether a woman can be affected with this fever more than once in her life, my experience does not determine.

Candour compels me to observe, that, since my cases occurred, my friend Mr. Burrows very kindly and humanely cautioned me on this subject, and to strengthen his opinion, transmitted me the following information. I have since taken the precaution to wash myself and change my clothes before visiting the uninfected. The usual mode of communication of infection in private practice is, the being visited by female friends, which I have done all in my power to prevent. Mr. Burrows also informed me, that Dr. Ramsbotham had stated to him the following circumstance illustrative of its contagious nature:—"A midwife lost a patient in puerperal fever; the next she attended at another part of the town died of it; and then another, at a different part. She was greatly alarmed, and consulted Dr. Ramsbotham what she should do. He properly advised her to quit practice and London for a fortnight. She did so; and the mischief ceased."

From these facts we are justified in regarding puerperal fever as decidedly contagious; and it behoves every practitioner, when he meets with the disease, to explain to the friends of the patient its peculiar nature in this respect; to let no person attend upon her but the nurse, and some selected relation or friend; to exclude all pregnant females from the house; and not to permit the nurse and her chosen friend to go abroad and visit pregnant women. After the recovery of any case also, the apartment should be well ventilated, white-washed, and dried by stoves. This precaution may interrupt the propagation of the disease, otherwise no person can tell how many may fall sacrifices to it.

As a prophylactic, I would recommend, when it prevails in a neighbourhood as an epidemic, that every pregnant female lose blood once, or twice, between the fifth and eighth month, to lessen the phlogistic diathesis, which, should the disease

occur, may moderate its violence. As the bowels are apt to be loaded with morbid matter, highly offensive and discoloured, they should be kept moderately open with magnesia, or rhubarb, and soap or aloetic pills, combined with extract of henbane, to prevent griping, as recommended by Professor Hamilton of Edinburgh. By these means the disease may be moderated, if not altogether prevented. During the prevalence of puerperal fever also, pregnant women should drink toast tea, or thin barley water, with lemon peel, instead of porter, wine, or diluted spirits, of which so much is improperly taken under the erroneous idea of supporting strength.

If these observations should prevent the frequency of this dreadful malady in the objects of our best affections, at one of the most interesting moments of their lives, even in a limited degree, I shall feel a satisfaction more easily to be conceived by those who possess proper feelings than can be expressed by language.

III.

Account of a Case of Aneurism of the Femoral Arteries of both Thighs, which occurred in a Native of Travancore, drawn up at the request of WILLIAM COLHOUN, *Esq. Staff-Surgeon to the Subsidiary Force in Travancore, and laid before the Medical Board of the Madras Presidency.* By A. NICOLL, M.D. Member of the Royal Physical Society of Edinburgh, and Assistant-Surgeon in H. M. 80th Regiment.

On the 27th of January last, a native of this country, rather tall, naturally stout, and of middle age, was brought to Staff-Surgeon Colhoun, with a large, diffused tumour on the right thigh, and a smaller one on the left. On compressing the tumour on the right thigh by grasping it tightly with both hands, a distinct and strong pulsation was felt at the upper portion of it; but in the middle, the skin appeared thin, elevated, and elastic, and looked as if it were on the point of bursting. The pulsations of the artery to the tumour of the left thigh were perfectly apparent to the by-standers; and but little compression was required to reduce the swelling, which again returned immediately on the pressure being removed.

On inquiring into the history of his complaints, it appeared that they had come on spontaneously; that the tumour on the right thigh had acquired its present magnitude in the course of four months; and that on the left, in a fortnight.

He knew no cause to which he could with propriety ascribe his complaints. He was by profession a *Bricklayer*, but worked

occasionally as a common *Cooly;* and in the latter capacity he had lately been employed. Some years ago he had been afflicted with repeated attacks of intermittent fever, but had lately enjoyed good health until he was seized with his present illness. He did not know that any of his relations had ever laboured under a disease similar to that with which he was afflicted; they had *all* died of fever and small-pox.

The first symptom of his complaints which he observed, was a *tumour*, small, hard, and throbbing, situated about the middle of the right thigh, which continued to increase rapidly, while the pain of the part became excruciating, especially when he attempted to walk, or stand erect. Numbness of the whole leg followed these symptoms, and rendered him totally incapable of pursuing his ordinary occupation. His health had become somewhat impaired from irritation of the tumour, want of rest, and confinement; his pulse was small and weak; his body a little emaciated; and the right leg numb and œdematous.

A laxative medicine was given, and an anodyne draught exhibited to him at bed time. Next day (28th) a consultation was called, at which all agreed in opinion, that the very dangerous situation of the patient called imperiously for the operation to be performed on the right thigh as soon as possible.

I had agreed, at the request of Mr. Colhoun, to take charge of the patient in my own house; and the operation, consequently, devolved upon me. Accordingly every necessary preparation was made for its performance, and an anodyne draught given to the patient at bed time.

It may be here necessary to remark, that the aneurismal tumour was so generally diffused, and the artery appeared apparently diseased so far up the thigh, that it became absolutely necessary to secure the artery very high up in the limb.

On commencing the operation, an incision was first made, beginning a little below the ligament of Poupart, and carried downwards in a direction with the inner edge of the sartorius muscle, fully four inches in length. Beneath the integuments, the cellular membrane was found considerably diseased; its cellular structure partly filled with serum and adipose matter, about the thickness of an inch. The glands of the groin and lymphatic vessels of the thigh were also much enlarged and diseased, which rendered the operation more tedious and troublesome than might have been expected. The muscular sheath was next divided, after leaving two small arterial branches, which were necessarily cut in the course of the operation; the fascia covering and enclosing the cord of vessels was then laid open about an inch in length, and the femoral vein and anterior crural nerve detached from the superficial femoral artery,

which appeared perfectly sound. A double ligature, small but strong, was now introduced beneath the artery by means of a needle-probe; the ligatures were separated from each other an inch, and tied; the upper one being near to the origin of the profunda femoris; and the under one close to a small branch which was given off from the artery.

The artery was divided in the middle, and its connections were preserved as much as possible, so as to give greater chance to the union of the sides of the vessel before the ligatures might separate. The ligatures were left hanging out of the wound, the sides of which were brought together by strips of sticking plaster, covered by a small piece of simple dressing and a light compress; and the whole leg supported by a warm flannel bandage. The patient was conveyed to bed, the leg placed in an easy and relaxed position, and an opiate draught given to him.

He rested pretty well that night and the following day, during which time the limb retained its natural warmth. Small doses of neutral salts were given, which procured him two or three copious evacuations. In the evening of the second day, shortly after taking an anodyne draught, he became very restless and feverish; which soon subsided, however, by giving him every hour effervescing draughts, consisting of the carbonate of potass and lime juice. The only complaint he made after the febrile symptoms had abated, was of a pain and throbbing near to the umbilicus. On carefully examining the abdomen, I discovered another aneurismal tumour situated in the aorta, in a line with the umbilicus, and corresponding in size with that of a pigeon's egg.

On the morning of the fifth day from the operation, the dressings were for the first time removed, and an adhesion was found to have taken place the whole extent of the wound, except in the parts immediately surrounding the ligatures, from the upper one of which a very little matter oozed.

The parts were well cleansed with warm water and soap, and the wound dressed precisely as before; the whole leg being again supported by a warm flannel roller. From this period the wound was dressed daily, and a laxative medicine, and an anodyne draught occasionally given to the patient.

On the tenth day from the operation, the ligature from the under portion of the femoral artery separated; and on the fourteenth day, the ligature from the upper portion, and also those from the small arterial branches, came away with the dressings. At this time I had learned that my patient had been in the habit of getting out of bed, and walking about the room regularly as I went from home; and that he had done so for two days past.

The wound continued to heal, and the tumour to decrease rapidly. His general health appeared to improve in the same ratio. It was evident, however, that the aneurismal tumour of the left thigh and aorta were increasing very much in size. An attentive examination of the artery upwards on the left thigh, convinced me that it was enlarged and diseased: the pulsations of it even could be traced distinctly from the tumour on the thigh to the one in the aorta.

The tumour on the left thigh has already gained an alarming magnitude, and the one in the aorta continues also to get larger.

Under these circumstances the operation on the left thigh was deemed highly dangerous, if not altogether impracticable.

The only other remarkable circumstance in this case is, that after one month from the operation, and while the patient was turning himself in bed, the tumour of the right thigh suddenly burst into the wound, and discharged its contents through a small orifice in the centre of a granulation in the middle of the wound; when nearly two pounds of thin blood with some pus were discharged.

March 21. The tumour has entirely disappeared, and the thigh has regained nearly its natural size and appearance. It may be worthy of remark, that this is the first case of aneurism which has occurred in a native on whom the operation has been performed.

Quilon, in the County of Travancore,
March 21, 1814.

IV.

Notices of Diseases at Richmond and Gilling in Yorkshire, for the Medical Repository. By Medicus.

In the first volume of the *Repository* there is a short account of the topography of Richmond in Yorkshire. This, without gratifying curiosity, is just enough to excite a desire to know more; particularly of its natural history, and the diseases which usually prevail.

Some years ago, Mr. Archdeacon Blackburn observed of this place*, "we have no distempers which can be called endemic; and when fevers prevail in the neighbourhood, few are affected by them in town. If any person bring an ague to Richmond, he is generally freed from it in a few days; though the village of Gilling, about a mile and a half distant, which

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* *Philosophical Transactions,* vol. lxv.

stands low, and has a pool of standing water adjoining to it, is visited with this complaint every spring and autumn. The air of Richmond seems peculiarly unfavourable to consumptive disorders. Many strangers come hither from different parts in the first stage of phthisis pulmonalis; but, after thirty-five years' experience, I may truly say, that not one has recovered, although the utmost care has been paid to their respective cases.

"The natives and constant residents, however, are not subject to distempers of the lungs, except when brought on by intemperance. But rheumatic complaints are very general, especially among the senior part of the inhabitants. In small corporation towns, like Richmond, numbers are taken off by excessive drinking: but the people here, who live temperately, seldom die earlier than in their eightieth year."

As this will probably meet the observation of the writer who gave the topographical notice in your first volume, I beg to inquire of him, if the pool of Gilling still exist, and if the occurrence of ague in that village be as regular as in the time of the Rev. Archdeacon Blackburn*. As the air of Richmond is admitted to be highly injurious in cases of phthisis, it may be worth while to ascertain if a removal to the village of Gilling might not be beneficial in such cases. If there be any truth in the opinion, that where marsh miasma prevails genuine consumption of the lungs is seldom found, this situation should be very favourable in such cases. The village of Gilling and the town of Richmond may thus reciprocally serve each other. A fair opportunity here occurs of ascertaining the effects produced on two very distinct diseases, by the local peculiarities of two places so near to each other; and I hope your correspondent will give the public some information on the subject.

V.

Examination of the Body of the late Lieutenant-General WITHAM, *forty-one Hours after Death.* By W. H. COATES, Surgeon to the Forces, at Portsmouth.

THE corpse exhibited, externally, much œdema in the lower extremities, with the abdomen distended. The jugular and superficial veins of the neck were turgid with blood, giving a dark hue to the integuments. The sternum being raised, the

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* The Rev. Archdeacon Blackburn's account applies to the years 1764 and 1773.

pericardium and heart presented a large confused mass, perhaps four times the usual bulk, pressing upon the diaphragm, and extending far into the right cavity of the chest. The pericardium adhered firmly to the heart throughout its whole surface, and was much thicker and more firm in texture than natural; the adhesions which appeared to have occurred at a remote period, were about a line and half thick.

The position of the heart was particularly singular, the base being far over on the right side, and occupying a considerable portion of the right cavity of the chest, having by its pressure disorganized the lung on that side. It rested upon, and with the right ventricle adhered, through the medium of the pericardium, to the diaphragm; the axis, taken through the apex and base, being nearly transversely across the chest. On an attempt to separate the liver from the connection with the diaphragm, the knife unexpectedly plunged into a cavity containing a large quantity of imperfectly coagulated venous blood; this cavity proved to be the right ventricle of the heart, forming a tumour in the abdomen by pushing downward a portion of the diaphragm.

The right auricle and ventricle formed a common sac, of capacity to contain at least two pints of fluid, the parietes of which were extremely thin and pale; the tricuspidal valves were not to be distinguished; and the columnæ carneæ were much fainter than natural.

The left ventricle and auricle were natural, with the exception of the pale colour of their substance, similar to that of the right ventricle. The large arterial vessels were unusually dense, approaching to cartilage, but not ossified.

The right lung adhered, generally, by firm adhesions to the pleura costales; was much shrunk, assuming the appearance of liver, and seemed very imperfectly, if at all, equal to the duty of respiration. The left cavity of the chest contained four measured pints of water; the lung, however, was healthy.

The liver was greatly enlarged, indurated, irregular in structure, and variegated in colour. The kidneys were considerably larger, and their texture more firm than natural; the membranæ propriæ were separated with extraordinary facility from the surface of the glands, as if they had been long macerated. No disease was observed in the bladder, which was empty. The stomach was greatly distended with fluid, none of which appeared to have passed into the intestines during the last forty-eight hours of existence: the intestines were healthy.

It is very extraordinary, that, with so much organic disease of the heart, life could have been supported so long, upwards of sixteen years since it was first suspected. The

great dilatation of the right ventricle and auricle accounts most satisfactorily for the irregularity of pulse, and the distressing disposition to syncope the patient experienced on the least exertion. Had not the right ventricle (by the singular change of position of the heart) come in contact with the diaphragm, and by uniting with it, strengthened with that muscle its own parietes, a rupture must long since have terminated existence. This successful effort of Nature is truly admirable. The difficulty of breathing is readily explained by the disorganization of the right lung, and the existence of water in the left cavity of the chest. The dropsical disposition is readily accounted for, either by the organic affection of the heart, or by the schirrous state of the liver: either would have been considered a sufficient cause, had the other been absent. The coldness and lividness of the hands and lower extremities, during life, is explained by the difficulty of transmission of blood through the lungs, from whence its florid property is derived.

It may become a query, whether the enlargement, and other circumstances noticed of the kidneys may not have been influenced by the many years' use of digitalis in diuretic doses.

VI.

Observations on the Cæsarean Section. By Robert Bellingham, Surgeon-Apothecary, Bourne, Lincolnshire.

In the first essay of a valuable work from the pen of Dr. Farre, intitled "Pathological Researches," a case is published of malformation of the heart in a woman who died suddenly in the eighth month of pregnancy.

To this case the following observations are appended: "The fœtus had been turned and extracted by Mr. Saner immediately after the mother's death. Although this humane effort to preserve its life was not crowned with success, the circumstances of the case being unfavourable, yet the attempt merits praise:—such an effort is not incompatible even with a trial of means for restoring animation to the mother. *The Cæsarean Section ought only to be used where the mother has suffered a violent death.*" It is the latter remark to which I am chiefly desirous of calling attention.

I shall first, briefly, relate a case which fell within my observation; and afterwards offer a few explanatory remarks.

The latter end of January 1813, I was very hastily summoned, about four o'clock in the morning, to a woman who was

said to be dying of croup; the symptoms of which had been gradually increasing for two days. They had commenced with shivering, followed by fever, cough, and difficulty of breathing and of swallowing; the latter symptoms were reported to be now rapidly increasing. This woman was in the eighth month of pregnancy; and had previously engaged my attendance. I knew that she had a bronchocele of unusual magnitude, and had heard her complain that it had for the last year given her frequent uneasiness both in respiration and deglutition, especially on taking cold. I went with all possible expedition to the house, about five miles distant; and entered the room just as she had expired in her husband's arms.

Having quickly satisfied myself that the vital functions were extinct, I represented to the husband, in a very few words, that I felt it to be my duty to make an effort for the preservation of the infant, and he acquiesced with my feelings. I immediately took a scalpel, and made an incision into the uterus; and, without the loss of a minute, extricated the fœtus. I then passed a female catheter (the most convenient instrument I had at hand) into the glottis of the infant, and endeavoured to induce respiration by the alternate inflation and compression of the lungs. I persevered with much hope of success for a considerable time; for, unless I was widely misled by my imagination at the moment, I distinguished several indistinct pulsations of the heart. The attempt, however, was unsuccessful; but I had the satisfaction of thinking, that "thus far was right:" and though it was improbable that a similar case should occur, yet I felt no disposition to doubt the propriety of my decision and conduct.

I had the opportunity of making only a very cursory examination of the parts about the throat. The size of the thyroid gland was enormous; its lobes extended backwards, especially on the left side, so as considerably to compress both the trachea and œsophagus. The membrane lining the larynx was much inflamed, and was covered in patches with an exudation of lymph; not, however, of such tenacity as is often found in cases of croup. The inflammatory appearances could be clearly traced to the bifurcation of the trachea. The inspection was made, however, without assistance, and with the feeble light of a single candle. It might, therefore, be very imperfect.

It is not with the view of provoking controversy, much less to enter the lists with such an antagonist as Dr. Farre, that I take up this subject, or impugn the opinion he has advanced; but from a wish to satisfy my own mind, by eliciting the opinions of others upon a point, the importance of which, in my estimation, fully compensates for the infrequency of its occurrence.

It behoves us to weigh well the several features of such a

case; and leave nothing for deliberation at the moment when we are called upon to act. It is not then a time to demur—to wait the opinions of abler men, or turn over the writings of authors:—we must act promptly, or not at all. I mean not to put the life of the fœtus in competition with that of the mother, where there is the possibility of the latter being preserved: but I must venture to express a doubt of the propriety of prohibiting the cæsarean section without some farther limitation than Dr. Farre has given.

In the critical case I have related, it will hardly be said that the most remote chance existed of re-animating the mother: the fatal cause could not possibly be removed. After the circulation of the mother is at an end, a very short time must be sufficient, though that time cannot be precisely fixed, to destroy the vitality of the fœtus; which, in such a situation, is literally drowned in the liquor amnii in which it floats. With regard to the time necessarily spent in the extraction of the fœtus by its natural outlet, I cannot speak experimentally. Should these observations meet the eye of Mr. Saner, possibly he may be induced to inform us on this point. I feel myself warranted, however, in arguing, *a priori*, that when it is considered that labour has not commenced;—that the os uteri is completely closed;—that the vagina and external parts are rigid and undilated; the process of turning and extraction must in such a case not only be so tedious as to make the chance of success extremely slender, but that every chance is altogether taken away. And I think I may venture to challenge the records of medicine for the production of a case, in which, under such circumstances, the effort has been "crowned with success."

The cæsarean section, as I have already shewn, is the work almost of a moment: it is unnecessary in such a case (for I speak only of that where the resuscitation of the mother is out of the question) to proceed with the caution required in the living subject; and it needs no instrument but a common scalpel, which every surgeon ought always to carry in his pocket.

I conclude by repeating the declaration, that I am prompted only by a wish to satisfy my own mind, and that of others, who may think this subject as interesting as myself; and although I at present consider as correct the opinion I have hazarded; yet, I am willing to listen with attention to any argument, and am open to conviction.

It may not be amiss to anticipate the remark, that the time necessarily occupied in the act of turning, must depend much on the circumstance of its being a first, or subsequent pregnancy. That the state of parts, and consequently the facility of the

operation, will be much influenced by this, I am ready to acknowledge. In the first pregnancy, therefore, my remarks will apply with greater force; but I can hardly doubt their validity even in the most favourable state of parts which former parturitions may have produced.

VII.

A Case of Poisoning by Oxalic Acid. By W. Robarts, of Burnham, Bucks, Member of the Royal College of Surgeons. *With Experiments to ascertain the Nature of the Effects of this Poison on Animals, and its Antidote, by* A. T. Thomson, *one of the* Editors.

I was hastily summoned one morning in September last, to see a girl fourteen years of age, living about a mile distant, who, as the messenger informed me, had taken a strong dose of physic, and was considered in a dying state. Supposing the dose of physic, or whatever it might be, had acted too violently, and that she had in consequence become alarmingly faint, I put into my pocket some sal volatile, and also some sulphate of zinc, in case any thing else than physic should have been swallowed. On my arrival, I found the girl sitting, supported in a chair, without any pulse or appearance of life, and her face and hands cold. I was informed, that, intending to take some salts, a paper unmarked had been taken out of a closet, containing six packets, each weighing an ounce; which, at the time, were supposed to be Epsom salts, and were given as such; but which were afterwards discovered to be salts that had been received under the name of tartaric acid, which the family frequently used with carbonate of soda to make soda water.

The girl had mixed the contents of one of these packets over-night, and had tasted the mixture, but, disliking it, set it aside until the morning, when finding they would not readily dissolve in cold water, she poured some hot water over them, and drank the mixture. In five minutes afterwards she complained of great pain in her stomach, and made great efforts to vomit, but nothing was brought up. The pain increasing, some warm water was given with the hope of inducing vomiting; but, although a large quantity was drank, it produced no effect. The pain during this time continued to increase. Her master, entering the room where she was, was struck with the alarming appearances in her countenance, and immediately ordered them to give her some oil, and to send for me. The oil remained on her stomach; but the pain was now changed to agony. She threw herself backwards and forwards, complained of giddiness, and exclaimed, that "something was burning her liver

out;" after which she became convulsed, and soon ceased to move. At this moment I arrived.

No other emetic than that which I had with me could be immediately obtained; and I considered that its exhibition then would be useless, as it was evident the stomach had lost its excitability. My object, therefore, was to endeavour to stimulate that organ, and at the same time counteract, as far as possible, the further effects of the acid, conceiving it to be, as was stated, tartaric acid. With this intention I mixed some aromatic spirit of ammonia with strong hot rum and water, there being no brandy in the house; then reclining the head of the patient, I poured into her mouth a considerable quantity of this mixture, in such a manner as to insure its passing down the throat. Hot water being at hand, a bath was instantly prepared, and in a few moments she was put into it: after remaining in it about fifteen minutes, her bed being made very warm, she was placed between the blankets, and quickly surrounded with bottles of hot water and hot tiles; her stomach and head rubbed over with hot spirits, and the latter enveloped in a pillow of heated oats. An enema of tobacco smoke was also, now, injected, with the intention of exciting the action of the bowels.

From the state in which I found the patient, I was not surprised at the failure of all these means; because, that the stomach had lost its excitability was too evident, not only from appearances on my arrival, but from the circumstance of her having swallowed a considerable quantity of warm water without its inducing vomiting. I nevertheless thought it right to persevere in the use of the means detailed; because, although the salt was powerful enough to paralyse the stomach, yet I imagined it was not sufficiently concentrated to produce abrasion, or destroy the organization of its coats. I therefore continued to act under the impression of the motto of that Society which has been so successfully and honourably employed in restoring suspended animation—"Forsan scintilla lateat."

Other means might have been used had I arrived at an earlier moment; but it is unnecessary for me to describe these, the object of this communication being to exhibit a case of death from swallowing a large dose of oxalic acid.

Dissection.—The stomach was found filled with a dark-coloured fluid resembling coffee grounds, from the examination of which nothing was learned. The membranes of the stomach had no appearance of the chemical action of the salt, except a turgescency of the vessels, which were all filled with dark-coloured blood. Neither the œsophagus nor the duodenum, nor the orifices of the stomach displayed any marks of inflammation, and the intestinal canal was in a healthy state; cir-

cumstances which I think clearly proves that the salt had acted altogether on the vitality of the stomach.

On analysing the acid, I found it was not tartaric but oxalic acid; from its precipitating oxalate of lime in abundance from lime water, and also from the appearance of its crystals.

EXPERIMENTS AND OBSERVATIONS.

The foregoing is the second case of poisoning by oxalic acid which has been reported in the Medical Repository*; and, as far as our knowledge extends, these two cases are the only instances on record of the fatal effects of this acid on the animal economy. The first case was translated into French, and published in the *Bibliothèque Médicale*†, with a very severe remark of the translator on the hypothesis by which Mr. Hume ventured to explain the deleterious effects of the poison: and, more lately, it was noticed in the *Annales de Chimie*‡, by M. Guyton Morveau, who not only coincides in the justice of the remark of the writer in the *Bibliothèque*, but endeavours to throw a degree of discredit on the entire statement of the case. "Lorsque Fourcroy écrivait," says M. Morveau, "il y a plus de quinze ans, que l'acide oxalique, qui, à la longue attaque les os, ne produissait aucun effet caustique sur nos organes, que l'on pouvait le préparer pour boisson, en l'etendant d'une suffisante quantité d'eau, et en l'édulcorant avec du sucre et du miel§, il étoit loin de penser qu'il pût, *en quarante minutes*, occasionner une mort violente." And again, "Il y a long tems que, comme le dit Fourcroy, le sel d'oseille (oxalate acidule de potasse) est employé au traitement des maladies sous la forme de boisson rafraîchissante, avec du sucre, et y ajoutant quelles gouttes d'huile volatile de citron.....; que l'on prépare de cette maniere une limonade sèche||. Et l'on n'aurait pas encore une seule observation de ses funestes effets!" And finally, "Il est difficile de se défendre de l'idée qu'il y a eu dans l'administration du remède une de ces méprises qui ne sont malheureusement que trop frequentes, et que tout ce qui a été fait depuis a eu moins pour objet de découvrir la vérité, que d'en éloigner le soupçon δ."

The celebrity of the name of Morveau, the widely-extended circulation of the Journal in which his opinion is published,

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* See Vol. i. p. 382. The case was reported by Mr. Royston.

† *Tome xlvi. Octobre* 1814, *p.* 121. ‡ *Tome xciii. p.* 199.

§ *Systême des Connaissances Chimiques, tome iv. p.* 188 *&* 196.

|| *Ibid. tome iv. p.* 185. δ *Annales de Chimie, l. c.*

and the circumstance of a second case presenting itself, excited us to investigate the subject; and led to the experiments which we are now about to lay before our readers. But previous to commencing our experiments, we conceived it requisite to ascertain whether the fatal result of the second case was properly ascribed to oxalic acid; for, that this was the poison in the first, we regarded as placed beyond a doubt by the testimony of the very expert chemist who examined it. We, therefore, procured a small portion of the salt from Mr. Robarts, who, in the letter which inclosed it, says — "The salt I send herewith was taken by myself from the paper the girl's came out of at the time."

The specimen was a white concrete salt, crystallized in slender quadrilateral rhomboidal prisms, of an extremely sharp acid, but not disagreeable taste, strongly reddening infusion of litmus; and soluble in rather more than twice their weight of water at 60°, and in their own weight of boiling water. A few grains put into the bottom of a phial, and heated, first melted in the water of crystallization, and then apparently disappeared, the sides of the phial being bedewed with moisture; but, on cooling, the salt was found sublimed in crystals in the upper part of the phial; and a very small carbonaceous residuum in the bottom. The solution of the salt threw down a copious white opaque precipitate in lime water, which being collected on the filter, dissolved readily in nitric acid. These effects (as the dose swallowed by the girl was of the same nature as the specimen) were sufficient to prove, that in the second case also the poison was oxalic acid: and having ascertained this fact, the next object was,

1st. To determine, by experiments, the immediate cause of death occasioned by oxalic acid taken into the stomach.

2dly. To endeavour to discover some substance which would operate as an antidote against its deleterious effects.

For these purposes the following experiments were undertaken.

EXPERIMENT I.

Half a drachm of oxalic acid, dissolved in a fluid drachm of water, was introduced into the stomach of a strong healthy rabbit. Almost immediately afterwards the animal staggered as if intoxicated, then gave two or three aukward leaps, and fell on its side; it, however, rose again, gave two convulsive bounds, and instantly expired. The temperature of the body was 77° Farh. twenty minutes after death, although it had become extremely rigid.

Dissection.—The tongue and fauces were white, and covered with viscid mucus, while the mouth was filled with froth. On opening the abdomen, the intestines did not present any preter-

natural appearance; but the stomach burst on the slightest touch at its greater curvature, where it appeared reduced almost to a semidiaphanous pulp: the blood vessels were much enlarged, and very black, the depth of the colour diminishing as they receded from the pulpy portion: the other parts of the viscus were in a natural state, except that the mucus was throughout coagulated. The lungs displayed marks of strong inflammatory action, and next to the stomach were most affected. The frothy fluid in the bronchial cells, the blood in the lungs, and that in the heart, the abdomen, and even in the substance of the kidneys, shewed the presence of an acid when tested with litmus paper. No evidence of free acid, however, was detected in the brain, or in the bladder of urine.

EXPERIMENT II.

About ten grains of the acid dissolved in two drachms of water were injected into the stomach of another rabbit, through an opening made in the œsophagus. The animal did not appear at first so much affected as the former; it, however, soon fell on its side, the breathing became laborious, and froth issued from the mouth; two or three convulsions then followed, and, in five minutes, it expired.

Dissection.—The stomach displayed nearly the same appearance as in the former experiment, except that the peritoneal coat did not give way; but the pulpy state of the other coats was much more extensive, and the colour somewhat florid. The mucus of the pyloric portion, which was otherwise healthy, was coagulated. The lungs were inflamed; but no traces of acid were found either in the lungs or in the blood. This difference probably arose either from the whole of the acid being expended on the stomach, or from the dissection having taken place a few minutes after death.

In both the foregoing experiments, the pulp into which the coats of the stomach were reduced, and the coagulated mucus, displayed, strongly, the presence of free acid when tested with litmus paper.

EXPERIMENT III.

Two drachms of oxalic acid dissolved in two fluid ounces of water, were attempted to be introduced into the stomach of a moderate sized healthy dog; but, owing to the animal disliking the taste of the solution, and his consequent struggles, very little of it was swallowed. No particular effect appeared to arise from what had been got down, except that the animal continued to shake his head, and spatter about his saliva. Twenty minutes afterwards, therefore, a second attempt was made, when as much of the solution as contained one drachm of the acid was swallowed. In two minutes the mouth of the

animal filled with froth, he became sick, and vomited violently and repeatedly, ejecting, besides the food which the stomach had contained, a viscid stringy mucus. The breathing soon afterwards became extremely laborious and stertorous, resembling that of a man in a fit of apoplexy; convulsive twitches followed, the animal fell on his side, the extremities becoming stiff and stretched out, and, after a strong convulsion, he expired in ten minutes from the time of taking the second dose of the solution.

At the moment of death the mouth was filled with froth; the tongue was of a dirty white colour, but blackish and turned up, nearly doubled upon itself, towards the point. The body was opened before it was quite cold.

Dissection.—The *stomach* exhibited on its external surface a considerable number of small brownish coloured spots, especially at the fundus, on which there was one larger than a sixpence, surrounded with a florid blush or areola; and the coats at this part were almost diaphanous and pulpy to the touch. All the vessels near this spot were of a black colour, similar to what was noticed in the first rabbit. The rugæ on the inner surface were very strongly marked, except at the above-mentioned spot and the adjoining parts, where the villous coat was completely destroyed, and converted into pulp. The stomach contained two pieces of bone, and a large quantity of viscid mucus of a dark colour, which was separated with difficulty by washing. The water with which it was washed slightly reddened litmus paper; but no other trace of acid was found in the stomach. The *œsophagus* and *pharynx* were remarkably strong, and of a natural healthy aspect. The *liver* and other intestinal viscera were apparently unaffected; nor did litmus paper, or lime water, discover any trace of oxalic acid in the abdominal circulation.

The general appearance of the *heart* was natural; but all the cavities were filled with dark coloured, firm, coagulated blood, which strongly reddened litmus paper. In the right ventricle a bright florid track, indicative of prior inflammation, extended from the semilunar valves into the pulmonary artery; and in the left ventricle the same florid appearance was perceived, but much stronger, extending from the semilunar valves, up the aorta, into the left subclavian and the arteria innominata (which in this instance gave off the left carotid), and a little way below the arch. In neither instance could the red colour of these parts be obliterated by repeated ablution.

The *lungs*, which were small and collapsed, were beautifully marbled with irregular crimson blotches, more or less deep; but litmus paper did not detect any trace of acid in the bronchial cells. The bronchiæ and trachea were perfectly healthy.

On opening the cranium, the dura mater exhibited evident marks of great previous excitement; being beautifully injected with red vessels; while the choroid plexus was almost one uniform bright scarlet: but there was no water in any of the ventricles; and in other respects the brain itself appeared nearly in a natural condition.

From the examination of the appearances presented by dissection in these experiments, it is evident,

1. That when oxalic acid is swallowed in sufficient quantity to act as a poison, its primary morbid action is on the stomach itself. But, it may be fairly concluded, that its action is not simply that of a powerful stimulant, exciting a high degree of inflammatory action in the coats of the viscus; but, from the pulpy substance into which nearly the whole of the coats are changed, its chemical action occasions the organized animal solid to enter into new combinations, and thence produces a decomposition both of the acid and the part to which it is applied. This conclusion is in some degree strengthened by the circumstance, that scarcely any trace of the acid was found in the stomach of the dog; for, although the acid lying loose in the stomach might be all ejected by the vomiting, yet, as the organ contained much mucus, it is probable that a quantity of it would have been retained sufficient to have indicated its presence, if no decomposition had been effected.

It is not intended to give any opinion as to the positive nature of the decomposition; or whether, as Mr. Hume has suggested, there be a decomposition of the *phosphate of lime* contained in the coats of the stomach*; but merely to state the fact that a solution of continuity and change of structure of the animal organized solid takes place; and our consequent opinion, that a reciprocal change is also produced in the acid†.

2. That part of the acid enters into the course of the circulation, is rendered evident by the blood contained in the heart of the dog, and in the abdominal vessels of the rabbit, giving

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* We have no hesitation in agreeing with M. Morveau, that Mr. Hume ought to have demonstrated the truth of such a supposition before advancing it. "M. Hume," says he, "avait un moyen bien simple d'apprecier sa conjecture; c'était de soumettre le phosphate de chaux à l'action de l'acide oxalique; il aurait bientot reconnu qu'elle est à peine sensible après une digestion d'une heure à une chaleur de 40 degrés." *Annales de Chimie, tome xciii. p.203.*

† The lungs are much affected in poisoning by verdigris, muriate of tin, and some other poisons. See *Traité des Poissons, par M. Orfila, passim.*

traces of it when tested with litmus paper. And it is only by admitting this introduction of it into the circulating mass, that we can explain the appearances of inflammation in the lungs of all the animals, and in the heart of the dog. But, as the short time in which the poison produced its fatal effect cannot be satisfactorily explained on this principle; it is probable,

3. That the proximate cause of death from oxalic acid is, the suspension of the functions of the heart and brain, which are sympathetically affected by the local injury done to the stomach. Mr. Brodie has satisfactorily ascertained that such is the case in poisoning by arsenious acid*; an opinion which is adopted by M. Orfila†; and which we conceive is equally applicable in explaining the action of oxalic acid. That the brain was powerfully affected in the dog, who was the subject of our third experiment, is undoubted, from the symptoms which immediately succeeded the vomiting, and continued till the death of the animal.

Having thus endeavoured to ascertain the mode in which oxalic acid acts as a poison on the animal system; the next, and more important object of inquiry was to discover by what means its fatal effects may be obviated.

Reasoning on the chemical properties of oxalic acid, it was conceived that a mixture of chalk and water or chalk and lime water, if given soon after the poison was taken, might operate as an antidote, by combining with the acid in the stomach and forming an insoluble oxalate of lime. Before, however, putting the correctness of this opinion to the test of experiment, it was requisite to ascertain whether oxalic acid combined as readily with solid carbonate of lime, as with lime in a state of solution. Into a solution of oxalic acid, therefore, a mixture of chalk and water was poured; effervescence instantly took place, and after it ceased, the mixture no longer gave any traces of acid. Muriatic acid was then poured upon it to take up the superabundant chalk; and after washing the insoluble residuum, it was found to be oxalate of lime, which dissolved readily in nitric acid. Having settled this point, the following experiment was made.

EXPERIMENT IV.

One drachm of oxalic acid, made up in the form of a bolus with bread, was introduced into the stomach of a male cat. For near twenty minutes the animal appeared to suffer no uneasiness, which was ascribed to the hardness of the bolus, as it had been made up some days before; but in less

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* See a paper in the Phil. Trans. intitled *Further Experiments and Observations on the Action of Poisons on the Animal System*, by *M. C. Brodie*, Feb. 27, 1812.

† *Traité des Poissons, tome i. p. 57.*

than half an hour shiverings came on, with indications of vomiting, which, however, the animal appeared capable of restraining. About a scruple more of the acid, dissolved in three drachms of water, was now injected into the stomach through a flexible tube. A considerable change, instantly, took place, the efforts at vomiting increased, the pupils became dilated, and the animal writhed its body, and uttered cries evidently expressive of pain. A quantity of the common chalk mixture was now poured down the throat of the cat: who immediately afterwards appeared to suffer some inconvenience from the sudden extrication of gas, but the other symptoms subsided, and the animal in a few minutes became apparently much easier; and in ten minutes, having vomited freely, he was perfectly composed, and remained so during the remainder of the day.

The ejected matter being examined was found to consist of some food, one half of the bolus undissolved, a portion of unaltered chalk mixture, some oxalate of lime, and a quantity of viscid mucus.

Although the result of this experiment was apparently decisive of the question; yet, it was suggested, that, as vomiting had occurred after the exhibition of the antidote, it was not possible to assert, although oxalate of lime was an insoluble compound, yet, that it might not itself prove deleterious. To determine this point, therefore, two drachms of oxalate of lime mixed with water was given to the same cat, in the evening of the day on which the former experiment was tried; but, two hours afterwards no symptoms indicative of any deleterious effect presented themselves, and the animal remained perfectly undisturbed. But, on then introducing into the stomach two drachms of the acid in solution, the pupils became amazingly dilated, and, uttering a horrible cry, the animal died in a few seconds.

The appearances on dissection were the same as those already detailed; and the blood in the heart, when tested with litmus paper, indicated strongly the presence of the acid.

Upon the reconsideration, therefore, of these experiments, in addition to the cases which have been recorded by Mr. Royston and Mr. Robarts, it may be fairly concluded:

1. That oxalic acid, taken into the stomach, acts as a virulent poison; although, the exact quantity that will produce this effect be unknown.

2. That oxalate of lime does not produce any deleterious effect, when swallowed.

3. That a mixture of chalk and water, by producing oxalate of lime in the stomach, when oxalic acid has been previously

swallowed, may be regarded as the antidote of that acid, when exhibited very soon after the poison has been swallowed.

It is necessary only to add, that although it be not probable that many instances of poisoning by oxalic acid may occur; yet, as two cases are already on record, and a hazardous indifference might be the result of M. Morveau's hasty and unphilosophical conclusions, it is of importance to be acquainted with the effects of the poison, and the most probable means of averting its fatal effects: and, if even one individual be rescued from the grave by a knowledge of these experiments, the Experimenter will consider his labour amply repaid.

PART II.

ANALYTICAL REVIEW.

I.

Observations on Pulmonary Consumption. By Henry Robert Southey, M. D. 8vo. pp. 174. Longman and Co. London, 1814.

The frequent fatality of the disease treated of by Dr. Southey, and the circumstance of its generally occurring at an interesting period, when the prospect of life is just opening, have occasioned it to be more noticed by the Faculty than most other distempers. Every effort that genius, study, practice, and observation can afford have been exerted to stem the progress of Phthisis pulmonalis; but, probably, with but little success: that the endeavour of Dr. Southey may be more fortunate we sincerely wish.

The minute divisions and subdivisions to which consumption of the lungs has been subjected by writers, are avoided in the work before us: two species only, the author thinks, comprehend, sufficiently for practical purposes, all the varieties. These are: 1. *those varieties which occur to persons of the strumous temperament;* and, 2. *those varieties which arise in habits not scrofulous, are generally the consequence of acute diseases; or, in other words, ulceration of the lungs modified by robust constitution.*

The strumous species, as being most common and also most destructive, is first noticed. As the only chance for effecting a cure in this form of the disease must arise from an early application of remedies, a knowledge of the appearances which pre-

dispose to it, and an acquaintance with its first symptoms, are indispensable. The scrofulous diathesis is marked by "fair thin smooth skin, through which the blood-vessels may be seen — blooming cheeks — light soft hair — light eyes with dilated pupils — thick nose and upper lip — white teeth — head rather large — narrow chest — flaccid muscles and long weak fingers, of which the last joint is large — and precocity of intellect. Dark hair, dark eyes, and dark skin are sometimes combined with the other signs of scrofula; but the skin is always thin and transparent, the pupils large, and the muscular fibre lax."

Although the symptoms of strumous Phthisis are infinitely varied, and rarely occur in the exact order and connexion in which they are described by authors; yet, the course of these symptoms is described with sufficient correctness by Dr. S. to give to his description a faithfulness that may render it useful, especially as regards the early indications of this formidable disease.

"The first symptom of the actual approach of the disease is usually languor and inaptitude to exertion, with a slight tickling cough, which is at first not noticed, or attributed to cold. To this succeed increase of heat after any meal—occasional chilliness—quick pulse—flushings of the face—dry skin, and heat of the soles of the feet and palms of the hands. Any kind of rapid motion, or even the act of going up stairs leisurely, occasions some difficulty of breathing, and brings on that sharp transient pain in the chest which is called a stitch. In females, amenorrhœa usually occurs early in the disease, and is often considered the only complaint. To these symptoms others more marked soon succeed. The cough becomes distressing, and is attended with expectoration of mixed pus and mucus often streaked with blood. There is commonly some fixed pain either in the side or below the sternum, or a sense of general soreness in the chest. The respiration becomes hurried, and there is a difficulty of lying on one side. Rigors, followed by increased heat, recur at intervals more or less regular. The body wastes, though the appetite often continues unimpaired. The tongue is seldom much furred, but has an erythematous appearance. Hoarseness, and an uneasy sensation in the throat, are common symptoms, and sometimes early in the disease there is a total loss of voice. A circumscribed red spot appears on the cheeks; the tunica adnata becomes of a pearly colour, the nails grow adunque, and the hair falls off. The sleep is disturbed by frightful dreams; and profuse perspiration particularly about the head and neck, attended with extreme anxiety, occurs towards morning. Even in the day time, if the patient dozes, he wakes bathed in sweat. The pulse seldom rises above 120 till an advanced period of the disease. The urine is generally scanty, high-coloured, and deposits a sediment. In the last stage the respiration becomes extremely laborious, the expectoration profuse, and œdematous swellings and diarrhœa commonly precede death."

The deviations from these symptoms are, sometimes, the absence of pain in the chest, of dyspnœa, of cough, of expectoration, and of muscular extenuation. The endeavours which have been made to ascertain whether the expectorated substance be pus or mucus, Dr. S. thinks of little importance, the character of the disease being sufficiently marked by other symptoms.

"There are many varieties of pus in different cases of decided phthisis. It is sometimes fawn-coloured from an uniform tinge of blood, oftener of a light green hue, occasionally of a yellowish white colour, and small firm white lumps considerably heavier than water, and not unlike the substance of the common tubercle, are sometimes expectorated. Purulent expectoration does not necessarily imply ulceration of the lungs. There is a form of pulmonary consumption, in which the mucous membrane lining the air cells seems affected in the same manner as the similar membrane lining the urethra is in gonnorrhœa virulenta. De Haen remarked, that patients may spit up the purulent matter for a long while, and die of phthisis, yet upon dissection no ulceration be found in the lungs. After recounting the symptoms of a case of this kind, he adds, 'Putaveritis vos itidem hic suppuratum visuros pulmonem? fallimini: apertum cadaver exhibet pulmonem in quo quid culpetis vix habeatis.' With the following assertion the experience of the most eminent anatomists in this country does not accord. He says, 'fateor ex phthisicis quos a morte multos aperui, numerum eorum qui integros quam qui læsos haberent pulmones majorem fuisse.' (*De Haen Prælectiones in Herman. Boerhaave Signa Morborum* 907.) Camper is quoted by Beddoes as confirming this opinion. I have not been able to find in what work of Camper's this statement occurs. In a recent publication Dr. Duncan senior treats of this form of the disease under the title of Catarrhal Phthisis."

The catarrhal variety of consumption submits to remedies more frequently than any other form of the disease; and the sputum, probably, is then only an altered secretion from a surface not ulcerated. But the marks that distinguish this variety from the more fatal kinds, seem at present too obscure to afford a certain diagnosis. "In most cases of this kind there is a general soreness in the thorax, not referred to one part more than another, and the matter expectorated is uniform in appearance."

The second variety of phthisis, or "*ulceration of the lungs, modified by a robust constitution,*" is characterized by the absence of all the marks of a strumous temperament. It is most commonly preceded by some acute disease, as pneumonia or hepatitis. The progress of the symptoms is more rapid than in the first variety; it requires an opposite mode of treatment; and the appearances on dissection are very different.

The predisposing and exciting causes of phthisis are investigated with considerable attention in the third chapter: they

are considered under the heads of *climate*, *diet*, *occupation*, and original *conformation*.

The view of the predisposition to consumption as produced by climate, and by diet and occupation depending on local peculiarities, affords an interesting portion of the volume. Iceland, Denmark, Russia, Germany, Holland, France, Italy, Spain, Portugal, the Mediterranean Islands, Egypt, Sierra Leone, the Cape and many parts of the African Continent, Hindostan, Persia, Greenland, Canada, Hudson's Bay, North America in its various tribes and nations, Carolina, the West India Islands, &c. &c. are traversed under the guidance of the best authorities, to ascertain the predispositions to this formidable disease as depending on locality*.

"From what has here been stated, it may reasonably be doubted if there be any part of the world in which consumption is unknown. That it occurs less frequently in tropical than in temperate climates, is certain; but it also appears, that it is not a common disease in some of the most northern countries."

Of the immediate or exciting causes of consumption, we shall notice two; viz. one arising from employments, or from accidental local circumstances acting in a similar way; that is,

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* As it is always the wish of the Editors to facilitate inquiry, the sources whence Dr. Southey has his materials are, as consonant to that wish, inserted in this note. Von Troil's, Horrebow's, and Sir George M'Kenzie's Account of Iceland—Linnæus' Tour in Lapland—Phil. Trans. lxviii. 635, 667—Malthus on Population, 215—Lord Molesworth's Account of Denmark, 91—Edin. Journal, No. VII.—Beddoes on Consump. 75—Finke, Versuch einer allgemeinen medicinisch-practischen Geograph. band 2. bl. 34—Tegenwoordige Staat der Vereenigde Nederlanden, i. 11—Wells, Med. and Chir. Trans. iii. 429—Finke, band 2. bl. 32—Portal sur la Phthisie Pulmon.—Saussure, Voyage dans les Alpes—Daguin, Topog. Med. de la Ville de Chambery—Russell's Aleppo, ii. 303—Thevenot, Relation d'un Voyage fait au Levant, i. 518—Winterbottom's Acc. of the Native Africans at Sierra Leone—Percival's Acc. of the Cape—Barrow's Acc. of the Cape—Fryer's Travels, Lond. 1698—Chardin, v. 182—Crantz's Greenland—Massachusett's Society, Hist. Coll. i. 129—Gen. Lincoln's Collections, i. 7, 26—Edin. Med. Jour. No. XVIII—Chalmer's South Carolina, ii. 122—Lempriere's Diseases of the Army in Jamaica, i. 41—Beddoes on Consump. 44—Monthly Rev. 1799—Sinclair's Statistical Reports, iv. 481—Willan, Diseases of London, 301—Portal, i. 492—Simmons on Consumption, 11—Michaux's Travels in America, 61—Sir Kenolm Digby's Discourse, &c. from the French, by R. White, 1658, Lond. 39—Memoirs of the Medical Soc. of London, v. 90—Morgagni, Epist. Anat. Med. 22, 3—Morton de Causis Phthiseos, lib. II. cap. i. p. 28—Morton de Tabe Nutricum, cap. vi.—Salvadori del Morbo Tisico, 4to. Trent, 1807.

the application of some material applied in the form of a fine powder to the air cells of the lungs: and the other arising from contagion.

" All those occupations which oblige the persons engaged in them to breathe a dusty or powdery atmosphere are unfavourable to the consumptive. Thus hair dressers, bakers, stone-cutters, bricklayers, laboratory-men, coal-heavers, and chimney-sweepers, dressers of flax and feathers, are peculiarly liable to this disease. '*J'ai vu à Paris* (says Portal) *plusieurs jeunes élèves en chirurgie qui suivoient mes lecons, lesquels par défaut de fortune étoient obligés d'exercer l'état de perruquier, atteints des premiers symptomes de la phthisie pulmonaire rendant aussi des concrétions pétriformes, et qui ne se sont guéris qu'en s'éloignant de l'atmosphère poudreuse qui causoit leur mal. J'en ai vu deux qui en sont morts, et l'un d'eux ayant été ouvert, on trouva dans les bronches des concrétions pierreuses, isolées, et graniformes, et d'autres qui adheroient aux parois des bronches comme autant d'incrustations; elles avoient moins de solidité, s'écrasant facilement sous les doights.*' Dr. Kirkland observes, that scythe-grinders are subject to a disease of the lungs from particles of sand mixing with iron dust, which among themselves they call the grinder's rot. Dr. Michaux, in his Travels to the westward of the Allegany Mountains, mentions that the inhabitants of the banks of the river Kentucky are averse to living near the great plane-trees which cover the low grounds, believing that the down with which the bottom of the leaves is covered in spring, and which falls off in summer, is a pre-disposing cause of consumption, by producing an insensible but continued irritation of the lungs. In the seventeenth century it was commonly believed that the soot proceeding from a coal fire was a frequent cause of consumption. This notion is curiously expressed by Sir Kenelm Digby*.

" In the needle manufactory, that part of the process by which the needles are pointed is called dry grinding. The persons employed in this labour are universally, and in a short time, affected by symptoms of approaching pulmonary consumption. They go on coughing till they either spit blood, or a thick substance having the appearance of matter. They decline in flesh and strength, and seldom survive the fortieth year. Pin-makers are said to suffer in the same way.

" The girls employed in the silk manufactory at Nismes, from the preparation of the cocoons to the spinning of the silk, suffer like our flax-dressers. In a short time they are said to lose their bloom and vivacity; they are seized with a short dry cough, soon followed by pain in the chest and fever, and die consumptive. Dr. Withering observes that casters of fine brass work much oftener die consumptive than any set of artists in Birmingham."

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* " Sir Kenelm Digby's 'Late Discourse made in a solemn Assembly of Nobles and learned Men at Montpellier, in France, touching the Cure of Wounds by the Powder of Sympathy, &c.' Rendered faithfully out of French into English by R. White, Gent. 1658, p. 39."

Some facts have occurred within our own knowledge, which seemed to afford strong evidence of the existence of a contagious principle in pulmonary consumption; and in many countries of Europe this source of the disease is fully admitted. Much has been written pro and con, and the authorities on each side are nearly balanced. The opinion of our author leans to the non-contagionists. In the following passage he states the authorities in favour of the existence of contagion, and his reason for rejecting these authorities:

"Along the northern shores of the Mediterranean it is every where considered dangerous to approach a phthisical patient. In Languedoc the clothes and furniture of those who die consumptive are burnt. The same practice prevails in Spain and Portugal; and in the former country this is enforced by the civil power. It is incidentally noticed by a Spanish author, as an extraordinary act of charity, that a woman was found to suckle the child of another who had died consumptive*. In Italy there has been much controversial writing on this subject, but the popular opinion is in favour of the contagious nature of the disease. Morgagni held the same notion, and on that account avoided opening the bodies of the phthisical. He says, 'illa fugi (cadavera) de industria adolescens et fugio vel 'senex, tunc ut mihi, nunc ut studiosæ quæ mei circumstant juven-'tuti prospiciam, cautius fortasse quam opus sit at tutius.' Morton also enumerates contagion among the causes of consumption. Hippocrates and Celsus, however, say nothing of the possibility of communicating this disease by infection. In England, on this subject there is little difference of opinion among medical men, and opportunities of observation are in this country but too frequent. If consumption were indeed communicable by contagion, who in this island could hope to escape? Either in his own family, or in that of some friend or relative, every one would be at times exposed to receive the infection. The servants, the nurses, the medical attendants, could hardly ever escape. That whole families fall victims to this disease; and that one child will follow another in rapid succession to the grave, no one doubts, and hereditary predisposition sufficiently explains the melancholy fact. But it will be said, Do we not sometimes find that a husband will receive the infection from his wife, or a wife from a husband, or a friend from too constant attention? That such a coincidence occasionally happens is undoubtedly true; but how much more frequent are the exceptions? And in such cases is it not more reasonable to suppose that there existed an hereditary tendency to the disease? Even if this were not the case, anxiety of mind, and constant watching, and exposure to cold, and self-neglect, may prove sufficient to produce consumption in the strongest constitution. It has been supposed that, although this

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* "Una caritativa mugur (is spoken of) que se encargo de criar un nino de pecho cuya madre murio etica, y por tanto no se atrevian á darle de mamar otras mugeres.—Espagna Sagrada, t. 17. p. 214."

disease be not contagious in northern latitudes, it may be so in the south of Europe. To me it appears incredible that such accurate observers as Hippocrates and Celsus should have omitted to notice so important a fact*."

If certain employments, as stated in a passage just cited, tend to produce consumption, there are others which seem to protect those who follow them, against attacks of this disease.

"Dr. Withering, in a letter to Beddoes, says, 'The only class of men I have yet observed exempt from this disease, are butchers and cat-gut makers. They both pass much of their time amidst the stench of dead animal matter. The former live chiefly on animal food, and are much exposed to the inclemencies of the season; whilst the latter live as other manufacturers, and work under cover in close and rather warm buildings.' A gentleman was employed to examine the butchers of Bristol, with regard to the healthfulness of their calling. The following specimen of the answers obtained to this person's interrogations may serve to give an idea of the whole: A butcher, thirty years in business, does not recollect any man dying in his service. He has had three or four apprentices at a time: they live well, eat hot meat for breakfast, with broth and onions; knew a boy die next door in the slaughter-house, but in consequence of ill-usage. He never had any thing the matter with himself. Another, fourteen years in the trade, had never heard of a man dying of consumption who was a butcher. Dr. R. Pearson made similar inquiries at Birmingham, and states, that he finds the complaints to which butchers are most subject, to be obesity, hepatic obstructions, and apoplexy; those to which they are least liable, phthisis and

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* "The following story told by Dr. Luzuriaga, affords a good specimen of the sort of evidence by which the contagious nature of consumption is supported:—'A Nun died at Bilbao of consumption. The furniture was burned; the walls, ceiling, and door washed; the floor taken up, and sand laid in its place. The cell was then tenated by another Nun in perfect health, and of an excellent constitution. In two months she began to decline, her flesh wasted, the chest was attacked, the cough became worse and worse; in short, she died consumptive in eight months after taking possession of the cell. General purification as before. It was supposed that the disease was hereditary in the last case. A third healthy Nun succeeded, and died in the course of the year. New examinations took place, and it appeared that the cord near the bed attached to the dropping bolt of the door had not been removed. This it was said was impregnated with the sweat of the patients, and with other noxious exhalations. It was removed, new furniture introduced, and a fourth Nun has lived in the same cell for five years.' In Italy, there is a story of a beautiful pair of gloves, worn by a first wife, and alone of all her appurtenances not destroyed upon her dying consumptive. Long after a second wife spies the gloves, wears them, and perishes like their former owner."

typhus. Mr. Creaser, of Bath, took a great deal of pains to collect facts on this subject, and found that phthisis and all forms of scrofula were rare among butchers. Similar inquiries were made at Cork by Dr. Gibbings and Mr. Ronayne, with like results. Both these gentlemen agree in ascribing exemption to butchers. The same observation seems to have been made in other countries. The author of a dissertation on the propriety of placing phthisical patients in slaughter-houses (*Utrum in carnariis commoratio phthisicis prodesse possit?* Monspelii, 1788, Auctore C. F. R. Nadaud de Villette,) tells us he was led to the idea by observing the healthiness of the butchers, their wives and families, at Montpellier. The Scotch fishwives, who live chiefly on animal food, are found to be little subject to phthisis, or any form of scrofula. Mr. Kilgour, surgeon, of Musselburgh, after a practice of thirteen years there, states positively that scrofula is a very rare complaint among those who are engaged in the fishing trade. They are very subject to active inflammations, and the only instances among them of phthisis pulmonalis occurred in very old people who had long laboured under *catarrhus senilis*. This account is confirmed by Mr. Williamson, surgeon, at Prestonpans; and by Dr. Roget. Among the Cornish fishermen, who also live chiefly on animal food, Davy found a similar immunity from consumption. Stable-boys, grooms, and dragoons, are enumerated among the favoured classes. They are likely to be well fed, and pass a good deal of their time on horseback; and the equable temperature of the stable may render them less liable to catarrhs."

The detail of treatment occupies a considerable portion of the volume; it is either prophylactic or curative. The principle of the prophylactic process as regards the first species of the disease, rests entirely on the power of retarding or preventing the developement of the strumous diathesis, by invigorating the frame. Warmth, in a due degree, animal food, attention to the functions of the skin and bowels, with regular exercise, are pointed out by Dr. Southey, as the surest means of preventing the accession of strumous consumption. The evidence adduced in support of this principle, is connected with several remarkable facts. "It appears," says Dr. Southey, "from all the facts I have been able to collect, that *in tropical climates, strumous phthisis is either unknown, or is confined to European settlers.*" The inference from this is, that cold is favorable to the developement of scrofula, and its consequence strumous consumption; but that it may be counteracted by artificial warmth, produced by clothing and well warmed apartments. In Iceland and Greenland this species of consumption is of frequent occurrence, while in Lapland and Russia it is a rare disease. The exemption of the Russians and Laplanders is attributed to the warmth of their habitations, and to their diet. The popular objection to warm clothing and warm rooms, upon the supposition of their increasing the danger of taking cold, is combated with the force of facts and reasoning.

" It is proper to remove some objections which are frequently made to the use of warm clothing and well-heated rooms, founded upon the popular error that they render the body more obnoxious to cold. This notion is as injurious as unfounded. It has already been shown that in much colder countries than England, where rooms are better heated, and warmer clothing adopted, colds are less frequent. The Laplander and Russian quits his hut, which resembles an oven rather than a room, and travels in his sledge, breathing with impunity an atmosphere below zero. Manufacturers exposed to very high temperatures, as those employed in glass-houses; starch and paper-makers, &c., are not more liable to catarrhs than others.

" In the celebrated experiments of Dr. Fordyce, Sir Charles Blagden, and others, published in the Philosophical Transactions*, it is repeatedly mentioned that these gentlemen passed from a room heated to 200° and upwards into the cold air with perfect safety. ' During the whole day (says Sir Charles Blagden) we passed out of the heated room, (where the temperature of the air seems to have been 240°, and sometimes 260°,) after every experiment, immediately into the cold air, without any precaution; after exposing our naked bodies to the heat, and sweating most violently, we instantly went into a cold room, and staid there even some minutes before we began to dress; yet no one received the least injury†.' In similar experiments repeated at Liverpool by Dr. Dobson, the gentlemen engaged in them passed from the heated room into the cold air with equal impunity.

" So far from bearing cold worse, from living in a well warmed habitation, it appears that individuals so circumstanced suffer less from occasional exposure to a low temperature than those who inhabit colder dwellings. Every one must have remarked, that on quitting a warm room to encounter a frosty atmosphere, less inconvenience is experienced than upon alighting from a cold carriage. In all those cases in which I have recommended confinement in rooms heated to 60° or 65°, I have remarked that the attendants most employed in those rooms were less subject to catarrhs than the rest of the family. It has been frequently observed that the natives of tropical climates bear their first winter in England better than their second. When the body is exhausted by fatigue, and *cooling* rapidly by profuse perspiration, a sudden exposure to cold air is highly dangerous; but bearing in mind this fact, we may state it as a general rule, that exposure to cold is less injurious when the temperature of the body is above than when it is below the natural standard. Let two men set out in a mail coach on a cold night, the one well warmed when he takes his seat, the other shivering from cold; and at the end of a journey of fifty miles, the man who started warm will hardly have felt cold, and the other will never have been warm. Uneasy sensation is always the result of a deviation from the healthy state in some part or parts of the body, and is in all cases to be obviated if possible. Nothing therefore can be more absurd than to

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* Vol. lxv. p. 111 and 484. † Phil. Trans. vol. lxv. p. 494.

suppose that the endurance of a painful degree of cold for any considerable time can contribute to strengthen the constitution."

In the second species of consumption, that which occurs to robust individuals, and is accompanied with hæmoptysis, the prophylaxis must differ completely from that which is considered proper in the first or strumous species. A milk and vegetable diet must be employed; an avoidance of all causes that quicken the circulation, a shunning of hot rooms, and a rejection of all fermented liquors, are absolutely required.

When the disease is established in either of its forms, the usual want of success in the treatment, the contradictory statements among writers, and the opposite properties of the remedies employed, lessen confidence in every curative process hitherto suggested. The author observes,

"One man cures all his consumptive patients with preparations of steel and a generous diet; another bleeds and starves with equal success. Myrrh and balsams are the specifics of one man, digitalis of another."

He very fairly, however, adds, "that the inconsistency is in reality less than it appears;" there being forms of the disease in which each of these contradictory methods may be proper. The error lies in supposing any one mode of treatment can be applicable to all cases.

The efficacy of different remedies and modes of treatment are examined in detail. Emetics are considered to be of doubtful efficacy always, and sometimes totally inadmissible. In a great majority of consumptive cases, the different preparations of iron are pronounced to be decidedly injurious, but a discrimination is made.

"In chlorotic females, of a consumptive family, this medicine as a preventive is invaluable, particularly when given in combination with some purgative. There is also a loud distressing dry cough, without fever or quickness of pulse, but causing loss of flesh and prostration of strength, which is removed by preparations of iron and nourishing diet. But where purulent expectoration, quick pulse, and hectic fever, mark the disease, I have never seen any advantage result from the use of oxyds or salts of iron; but, on the contrary, an aggravation of all the symptoms."

The power which digitalis possesses of lowering the action of the heart and arterial system in many instances, and of accelerating the secretion of urine in many others, has been unquestionably established; but the full range of its properties is, possibly, not yet developed. To which of the two great classes of substances, by which the physician acts upon the functions of animal bodies, it belongs, is not determined. Whether it be *a stimulant or a sedative*, is yet a question.

"In some cases, when given even in very small doses, it reduces the frequency of the pulse, renders the expectoration easy, and alters the nature of the matter expectorated. In others it seems rather to increase than moderate the quickness of the circulation. Sometimes it produces intolerable nausea and vertigo, without in any degree alleviating the pulmonary symptoms, or seems to act only on the kidneys. In that form of pulmonary consumption which is preceded by hæmoptysis, of all internal remedies I consider it the most useful. In strumous constitutions it is less frequently beneficial; but no practitioner can have given it an extensive trial without being convinced of its occasional value."

Of the occasional utility of soporifics, every practitioner must be convinced, at least as alleviating the distress arising from symptoms which can only be alleviated. Opium, hyosciamus, conium, humulus, and lactucarium, either separately, or in various combinations, are the substances here noticed. Whether there may not be others in the wide range of nature yet left untried, and carelessly and inconclusively employed, may be questioned. Who can determine whether, among the solanums, cynoglopums, and other species of the natural order luridæ, there may not remain unnoticed individuals more potent than the preceding, to quiet irritation and relieve pain?

Among other means employed for the alleviation, if not the cure of this uncontroulable disease, Dr. Southey particularly examines the effects of temperature, either that of genial climates, as Lisbon, Beja, St. Michael's, Valencia in the South coast of Spain, Hieres in the South of France, Nice, Naples, Madeira, Egypt, and the West Indies; or as artificially produced:—the effects of the warm bath—gestation—sea-voyages—the inhaling of balsamic substances—swinging—factitious airs—and marsh effluvium, or that material, whatever it be, which gives rise to intermittents.

That consumption is comparatively rare where intermittent fevers prevail, has been asserted on respectable evidence; and the inference that persons threatened with phthisis should be sent to districts where agues are endemial, has been founded on this evidence. Dr. Wells, in the 3d vol. of *Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge*, supports this opinion with a plausibility that has induced our author to give it a minute examination. The result has shewn, we fear, that the facts produced by Dr. Wells are insufficient to support the conclusion, that *the local circumstances favourable to the production of intermittents, are, in an equal ratio, unfavourable to the production of phthisis pulmonalis.* Of the good effects of the tepid bath, Dr. Southey seems fully satisfied. As it is a remedy but little attended to in this country, we cite the passage containing his observations.

" At a temperature varying from 90° to 94° it commonly lessens the frequency and increases the fulness of the pulse. It has been absurdly supposed, that all baths which do not in the first instance produce a sensation of cold must be relaxing. The impunity with which people remain in the tepid bath for several hours at a time in different parts of Germany and Switzerland (at Baden, at Landecke, Pfeffers, &c.) is decisive on this point. In delicate females of the strumous temperament hovering on the brink of incurable disease, the tepid bath often proves a powerful agent in the removal of the threatening symptoms. The feelings of the patient will afford the best criterion for the degree of heat to be employed, provided that of 96° be never exceeded. Above that point the bath is hot rather than tepid, and instead of invigorating exhausts. If the exacerbations of fever be well marked, and the patient or attendants can tell when a rigor is likely to occur, that time should be chosen; but this cannot always be done; and as a general rule, the middle of the day is the best time for the employment of the bath. The patient should never remain in the water long enough to excite unpleasant sensations. Ten minutes is quite sufficient for the first immersion, and the time may be gradually increased. When it can be procured, salt water is to be preferred to fresh. It is only in the early stages of the disease that essential service is to be derived from this remedy; at a later period it must be used with caution, and when anasarcous swellings are present becomes inadmissible."

The condition of the lungs of those who die of phthisis, as ascertained by dissection, is noticed in the second chapter: but to avoid any interruption in the detail of the diagnosis, predisponent and exciting causes, and the treatment, we venture to notice it as the last. Various appearances ascertained by examination after death are described in this chapter: it will suffice to state some of those descriptive of the *tubercle*. The structure of the tubercle is not glandular; it cannot be injected: it seems to be a diseased deposition liable to inflame and ulcerate. Its substance is white, smooth, and firm; varies in size, and is without capsule, until it becomes a vomica. The pus formed in it, when it takes the form or denomination of vomica, is thicker, and bears more resemblance to curd than the product of common inflammation. It is sometimes so numerous as to fill an entire lung with small portions of sound intervening pulmonic substance. It has varieties; as, the soft, large, brown tubercle, the existence of which is not yet determined by any peculiar symptom: and it may exist without being productive of much disturbance in the respiration.

A retrospect of this ingenious and very well written pamphlet does not enable us to say that its author has made any marked discovery in the nature and quality of pulmonary consumption, or has suggested much novel treatment. A judicious prophylaxis is very properly enforced, and some popular errors

are explained: some opinions of the efficacy of medicinal substances are corrected: and some distinctions of the nature of the disease are made, which, in proportion to the attention given to them, will be serviceable.

II.

Engravings of the Thoracic and Abdominal Viscera, and the Canals connected with them; representing the Natural Appearance of those important Parts immediately after Death, and without being affected by previous Disease. Drawn under the direction of, and with Descriptive Letter-press. By Alexander Monro, Jun. F.R.S. Professor of Anatomy and Surgery in the University of Edinburgh, &c. &c. 4to. pp. 31. Edinburgh, 1814.

That faithful and characteristic delineations of the structure, both external and internal of the human frame, are highly useful to the student in anatomy, will hardly be denied; but that many delineations, faithful enough to be useful, have been produced, may yet remain a question. From the pencil of Leonardo da Vinci, Titiano Vacelli, and Michael Angelo Buonarotti, excellence indeed might be expected of every kind; and in this branch, as far as they have applied to it, their productions are inimitable. Professor Monro seems fully sensible of this; and if the artists employed by him have not perfectly succeeded, the attempt deserves a degree of approbation.

The plates in this volume, which are intended to give a representation of the parts in a healthy and perfect state, undisturbed by disease and free from morbid alterations, are five in number. The first gives a view of a vertical section of the cranium, nose, and cervical vertebræ; one half of the under jaw has been removed to expose the tongue and other parts of the mouth, together with the pharynx and passages communicating with it:—the second represents the stomach and liver of an adult, with a portion of the duodenum; and is nearly half the size of nature:—the third, a delineation of part of the abdominal viscera, is coloured after Nature, to give an idea of the tints of the bowels in a healthy state, and as they appear upon being exposed a short time after death, and while the body is still warm:—in the fourth, the contents of the thorax are exposed, by removing a portion of the ribs and the sternum, to give a view of the thoracic viscera, with the manner in which the heart and lungs are connected to each other by the pleura; it is likewise coloured:—the fifth is a copy after the splendid plate of *Caldani*;

it is a lateral view of the thorax, the abdomen, and pelvis of the male, only half the size of the original.

As the plates, with their descriptions, occupy nearly the whole of this thin 4to, but little is offered for critical remark; physiological or pathological illustration scarcely comes within a design intended to be purely descriptive: we may be allowed, however, to express a wish that the execution of so laudable a design had been better suited to do credit to a professor in the first medical school in the British Empire, perhaps in Europe.

III.

Medico-Chirurgical Transactions. Published by the MEDICAL and CHIRURGICAL SOCIETY of London. Volume the Fifth. 8vo. pp. 446. Eight Plates. Longman and Co. 1814.

(Concluded from p. 236.)

XII.—"*Case of Cynanche Laryngea, with Remarks.*" By Thomas Wilson, Surgeon.—This is a well-marked case of the disease, in a man twenty-four years of age. Severe early blistering, and evacuations from the bowels, apparently saved his life. The following observation on the employment of blood-letting deserves notice.

"If blood-letting be neglected at the commencement, the pulse will in all probability soon become too feeble to admit of its use. In proportion as the swelling in the larynx increases and respiration is impeded, the blood becomes less fit for being the proper stimulus to the left side of the heart and to the arterial system. Hence bleeding at a late period might not only endanger the circulation, but be useless or even hurtful to the local affection, as a certain degree of vigour in the circulation is necessary to push forward the blood through the debilitated inflamed vessels."

XIII.—"*Account of a Child born without a Brain, which lived Four Days.*" By William Lawrence, F.R.S.—This is the most elaborate production in the volume; and beside the history of the acephalous child, it gives a sketch of the principal deviations from the ordinary formation of the body; remarks on their production; and a view of some physiological inferences to which they lead. The imperfect manner in which this subject has hitherto been treated in physiological works, has induced Mr. Lawrence to go somewhat largely into it.

The most important deviations from the natural structure, occur to the two great organs of the frame, the brain and the heart, with their appendages, the nerves and blood-vessels. An inquiry into the history and peculiarities of these deviations will be useful, by shewing the causes of failure in formation;

the circumstances under which it is produced, the conditions necessary for the production of perfect beings, the elucidation of hypotheses concerning generation, and by the exemplification of the general fact of the regularity of Nature's work; for even in these abortive attempts, she acts according to rule, and deviates from her accustomed mode of proceeding, not capriciously, but in a certain series and order. The acquaintance our readers must already have with the talents Mr. Lawrence possesses for inquiries of this nature, will, we believe, induce them to give his paper an attentive perusal; and to their notice we unhesitatingly recommend it.

XIV.—"*History of a Tubercular Eruption, of a syphilitic Appearance, but curable without Mercury.*" By T. Bateman, M.D. F.L.S.—Dr. Bateman says, he has eight or ten times met with an eruptive disease, which has not been noticed by medical writers, and was not included in the enumeration of Dr. Willan. The description of this eruptive disease we insert in his own words.

"The patients have usually stated, that, after an attack of severe headache and pains in the limbs, which they have compared with rheumatic pains, accompanied with extreme langour, and loss of strength, which had continued from a fortnight to three weeks, they observed an eruption appearing about the sternum and epigastrium. This eruption has at first been supposed to be the effect of flea-bites, and, in one instance, was believed to be the measles. It gradually extended itself over the trunk, to the legs and arms, and lastly, to the face and scalp. At the same time, a roughness and soreness of the throat began to be felt, and a slight tickling cough ensued. The pains about the shoulders and elbows, and in the legs, sometimes affecting the tibiæ, and sometimes very severely the tendinous portion of the gastrocnemii muscles, continued, and even increased after the eruption had appeared; the appetite became entirely impaired, so that no food was desired, and even the smell of it was loathsome; the languor and loss of muscular strength were such, that the patients were sometimes unable to walk, or even to support themselves, without assistance, in an erect posture. The tongue was furred and clammy; the pulse was considerably accelerated and very feeble; but the functions of the sensorium did not suffer:—a sort of erethism, indeed, rather than actual fever, seemed to be present. The bowels were generally much constipated. The eruption, which had extended over the whole body in all the cases, at the time when I first visited the patients, consisted of a number of small, circular spots, from one to two lines in diameter, slightly elevated above the surface of the cuticle, but flattened on their own superficies. They were at first of a dusky rose-colour, smooth and shining; but subsequently they became somewhat darker, or of a more purple or chocolate hue; and the surfaces of some of them at length exhibited a slight tendency to desquamation in the centre. This tendency to scale was generally most remarkable in the tuber-

cles affecting the legs, which were somewhat larger than those of the rest of the body: a minute scaly crust was also occasionally formed upon the centre of some of those, which were seated on the forehead, when the eruption was at its acme, or in its decline. If the fauces were inspected, the tonsils, and sometimes also the uvula and velum pendulum, were found puffy and inflamed; and on the former, superficial ulcerations generally appeared. The tarsi were also usually affected with inflammation, which was often increased by the occurrence of several of the tubercles along the palpebræ, and a glutinous discharge took place along their edges: occasionally, as might be expected, the tunica conjunctiva was likewise inflamed. The scalp was generally painful and tender when pressed, and sometimes elevated or thickened here and there, presenting little knots or tumors to the finger. The cutaneous tubercles were generally most numerous on the inside of the arms, and on the face. They were not painful or sore to the touch, and not accompanied by itching, tingling, or any other disagreeable sensation. However long they continued, they have not shewn any tendency to suppuration, or to ulceration, in the cases which I have seen. When they begun to decline, their colour became less red, inclining to brown, and they gradually subsided, and contracted in circumference, leaving a slight discoloration of the same hue for a short time after the natural texture of the cuticule was restored."

Although the Doctor professes to have no knowledge of the causes of this disease, his attention to it tends to add to our acquaintance with the natural appearances of cuticular affections, and will assist in perfecting the pathology of a class of disease, yet in much confusion and obscurity.

XV.—"*Case of Bubonocele, requiring a second operation five days of the first.*" By Thompson Foster, Esq. Surgeon.—In a fit of coughing, a large quantity of intestine, of a deep dark colour, burst through the wound on the groin; the patient (sixty-three years old) was very weak, pulse small, quick, and intermitting; great anxiety, restlessness, and pain in the part. Mr. F. easily passed his finger through the external ring; but finding the intestine firmly adhering to the space between the external and internal rings, he was obliged to dilate the former still more than had been done in the first instance, to give room for separating the adhesions, and for dividing two membranous bands, which strongly girt the intestine. The internal ring was found closely contracted round the intestine, causing the strangulation. This Mr. F. dilated with a curved bistoury, passed in the groove of a director. The intestine, being thus freed from all adhesions, was easily returned; and in fourteen days the patient was perfectly recovered.

XVI.—"*On the Effects of large Doses of Opium in a Case of Diabetes Mellitus.*" By Mr. W. Money, Surgeon.—This patient

gradually increased the dose of opium from the 10th of Feb. to the 1st of March, at which time the quantity of opium consumed in twenty-four hours amounted to twenty-four grains. This dose was continued daily, divided into five or six portions, till the 12th of the same month, when his health was considerably improved. Very little inconvenience was felt from these large doses of opium. The pulse was mostly between 60 and 70; there was no lethargy; the appetite continued good; and the bowels were not only moderately open; but he had, about every fourth day, rather a small spontaneous purging. The medicine had an evident good effect; the quantity of urine decreased, and the strength and spirits improved under its use.

XVII.—"*Further Observations on the Diseases which affect the Synovial Membranes of the Joints.*" By B. C. Brodie, Esq. Surgeon, F.R.S.—At a preceding sitting of the Society, Mr. Brodie produced some cases which elucidated the pathological history and classification of the diseases of the human joints. In this he communicates practical observations on the symptoms of diseases of the synovial membranes, and on their treatment. Inflammation of the synovial membrane may occur as a symptom of constitutional disease in rheumatism; where mercury has been exhibited improperly, in large quantity; or where there is general debility. In these cases the inflammation is seldom severe, often leaving one joint to attack another, or suddenly subsiding; it sometimes occasions effusion of fluid into the joint, but rarely terminates in the extravasation of coagulable lymph, or thickening of the inflamed membrane. This disease is more severe when it is produced by a sprain, or by cold. It is sometimes confounded with other diseases, under the general term white-swelling, and is often chronic, but occasionally takes the form of acute inflammation.

In the acute form of this disease, leeches and general bloodletting are recommended, with an attention to the state of the bowels and diaphoretics: warm fomentations to the part, Mr. Brodie prefers to cold lotions. In the chronic form, the joint should be kept in a state of perfect rest: blood should be taken from the part by leeches or cupping, and followed by a blister large enough to include the circumference of the joint. Bloodletting and blisters should be repeated in succession. After the subsidence of the inflammation, stimulating embrocations are useful, and especially oleum olivæ ʒiss, and acidi sulphurici ʒss. In delicate persons with thin cuticle, the quantity of acid should be diminished. Friction Mr. Brodie has not found to be useful. This part of the paper is followed by a description of the symptoms, and a detail of the treatment of those

cases in which the synovial membrane has undergone a morbid change of structure.

XVIII.—"*On the Muscæ Volitantes of Nervous Persons.*" By James Ware, Esq. F.R.S.—An account is here given of this affection, as it appeared in three persons, with remarks on its proximate cause, its probable termination, and the means which have been employed for its removal. This imperfection in vision is occasioned by the appearance of dark-coloured moats floating before the eyes. These assume various shapes and figures, appear at different distances, and move in different directions, but have no tangible existence in the places where they are seen. This state of vision occurs to persons of nervous idiosyncracy; and the more common exciting cause appears to Mr. Ware to be too close application of the mind to objects that occasion anxiety or distress. That those moats are symptoms either of incipient cataract, or incipient amarosis, Mr. Ware denies; and thinks that his observations will contribute to remove, what he considers to be, an erroneous opinion. The quotation of a part of the first case will shew the treatment Mr. Ware thinks best adapted to the removal of this disease. In this case (that of a lady, thirty years of age), a great number of yellow moats danced before every object to which she directed her eyes. Beside these, if the eyes were exposed to a strong light, the air appeared full of small particles, resembling globules of quicksilver in continual motion; among which were three or four darker coloured than the rest, which were as large as small peas, and revolved on their axes. The eyes, when exposed to a strong light, perceived several long irregular figures, composed of these globules twisted together, and others like the flue that is swept from bed-rooms. The figures appeared to rise when the eyes were lifted up, and to fall when they were turned down. If the patient looked at the sky for two or three minutes, and then turned from it, the eyes flashed fire for the same space of time. All the impressions which a strong light made on the eyes, continued for some time after the light was excluded, except the dark-coloured specks, one only of which was perceived when the eyelids were closed, and this also disappeared if the hand was placed before the eye. This lady had been much afflicted by the death of her husband. Her legs and arms trembled, and her heart beat violently; she was flatulent, and had a dull heavy pain on the back of her head, which sometimes extended to the forehead and sockets of the eyes. Her bowels were in good order, and all the evacuations regular as to time and quantity. The pupils appeared perfectly clear, and dilated and contracted freely; the smallest characters were distinguished with facility.

"Under these circumstances, my advice was to aim at strengthening the constitution, and particularly the nervous system, by giving two or three times in the day small doses of the volatile tincture of valerian, mixed with an equal quantity of tincture of castor, and joined occasionally with the camphor mixture or infusion of cascarilla. I directed warm water, or a warm infusion of rosemary, to be applied to the eyes and forehead, whenever they felt heavy and uncomfortable; and that the forehead, temples, and outside of the eyelids, should be embrocated morning and evening with camphorated rosemary spirit. I also recommended a change of residence, with such occupations and amusements, as were most likely, without occasioning fatigue, to withdraw the mind from the reflections which had been the source of anxiety and distress. This advice was pursued for a considerable length of time; the moats soon becoming less troublesome, and the mind being relieved from the dread of blindness, which had previously occasioned extreme anxiety."

There are many other remarks, both theoretical and practical, in this paper, which we should be glad to present our readers with, did not the limits within which this article is confined forbid.

XIX. "*On the Treatment of Erysipelas, by Incision.*" By A. C. Hutchinson, M.D.—The form of this disease, to which Dr. H. has applied the treatment by incision, has been the *E. phlegmonoides*; several free incisions with a scalpel were made on the inflamed surface, in a longitudinal direction, through the integuments, and down to the muscles, as early as possible in the disease, and before any secretions had taken place.

"These incisions may be about an inch and half in length, two or three inches apart, and vary in number from six to eighteen, according to the extent of surface the disease is found to occupy. They will not only yield the operator between fifteen and twenty ounces of blood from the vessels most actively engaged in feeding the disease, but they will give considerable relief to a tense and over-distended skin; which is clearly evinced by the great retraction that takes place between the lips of the incised wounds, immediately after the instrument is withdrawn; and further, they form ready channels through which any fluid may pass as soon as secreted; and thus the formation of bags of matter, and the insulation of the integuments will be effectually prevented. Fomentations generally succeed this operation, alternated, sometimes, with cold saturnine lotions, until a reduction of all the unfavourable symptoms, which we have invariably found to take place within twenty-four hours. In making these incisions, I would recommend that care be taken not to cut in the direction of a principal artery uncovered by a muscle or a tendon, which might afterwards impede its actions; nor in the course of the principal lymphatic vessels, as troublesome swellings of the limb below would, it is probable, be the consequence of their division."

The medical treatment employed by Dr. H. was confined to keeping the bowels open, and the skin perspirable; and in cases of great irritation, opium at bed time. The success of this treatment, we are here assured, has been very encouraging.

XX.—"*Case of Obstructed Aorta.*" By Robert Graham, M.D.—This case is so singular, that Dr. G. asserts there is not another on record; the appearances on dissection only are related, accompanied with remarks and a plate. The existence of life, under so great an interruption to the vital operations as this case presents, may be considered as a proof of the wonderful power Nature possesses of accommodating herself to the greatest changes in the most essential organs of life, provided such changes are gradual.

XXI.—"*Account of an Epidemic Fever, which occurred at Gibraltar, in the Years* 1809, 1810, *and* 1813."—The Society is indebted to the War Office, to the Medical Board of the Army, and to Dr. Gilpin, for the most important of the materials in this article. Beside the official military returns of the three sickly years, the Society has been favoured with the returns of three other years of ordinary health, preceding or intermediate to those in which the fever occurred; and with an account of the weather in 1811, 1812, and 1813. The most interesting part of this account consists of twenty-one queries by the medical board, with the answers of Dr. Gilpin to those queries. The following conclusions arise out of this history of the Gibraltar Epidemic.

"I. The belief of the principal medical officers in the infectious nature of this epidemic.

"II. That the prevalence of it, like that of the plague, is limited to a particular season of the year. The season at Gibraltar, is the months of September, October, and November. The number of deaths in December is considerably above the average of the rest of the year, but they are chiefly cases in which the seizures must have been in the preceding months; for it appears from Mr. Fraser's table, that the number of new cases diminished rapidly even in November.

"III. The various degrees of mortality in the sickly years, as compared to each other, and as compared to the years of ordinary health, are exhibited in the tables. In the year 1804, the proportion of annual mortality taken on the average strength of the garrison, was 1 in 5.4. The whole number of deaths in this year was 548, of which only 44 occurred in the nine months exempt from the epidemic. In the year 1810, the proportional annual mortality on the average strength of the garrison was 1 in 16.1. This was more equally diffused through the year, imputable no doubt to the presence of those regiments which had served in Walcheren. The

whole number of deaths was 307, of which 187 occurred in the nine months which are not liable to the epidemic. In 1813, the proportional annual mortality on the average strength of the garrison was 1 in 10.6. The whole number of deaths was 326, of which 260 occurred in the three epidemic months.

"IV. It appears from the reports of mortality in the three years of ordinary health, that in the three months to which the epidemic is incident, the mortality is not greater than in the other months of the year.

"V. That the average mortality of the years of ordinary health is 1 in 48.4. This is a rate of mortality considerably greater than what takes place in the same class of subjects in England; for by the returns of population in 1811, the rate of mortality there in all ages was 1 in 49. And it appears by calculations, instituted with a view to ascertain the value of lives in granting annuities, that the mortality of persons in the prime of life is about one half of what it is on the whole population of all ages. Is this difference owing merely to climate, or in part also to some peculiar circumstances in the situation of this garrison?"

Upon the whole we are disposed to think this the most authentic account that has yet appeared of this alarming epidemic.

XXII.—"*On the Diuretic Effects of the Pyrola Umbellata.*" By W. Somerville, M. D.—The facts respecting the diuretic properties of this species of pyrola, promise the addition of a powerful remedy to this class of our Materia Medica. An infusion of the whole plant in water, being nearly of the colour of green tea, taken in the quantity of a pint in twenty-four hours, manifested its diuretic property in two days; and it produced an unexpected effect on the stomach, namely, an increase of appetite. A decoction acted with greater energy than the infusion*. An extract, of which thirty-four pounds of the recent plant yielded four pounds, taken in pills, or dissolved in water, possessed similar properties. Of this extract Dr. Somerville gave ℈v. in twenty-four hours; and he asserts, no circumstance within his knowledge has occurred to forbid the use of it in any form, or to limit its dose. In many instances the urine, while the medicine was employed, assumed the colour of the infusion, and in one instance it became greenish. Its favourable action on the stomach, manifested by an increase of appetite, often appeared.

The *pyrola umbellata* is found in great abundance in the pine forests of North America, growing luxuriantly under the shade and shelter of trees, in a dry sandy soil, enriched by de-

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* We shall have occasion again to take up the subject of the genus *Pyrola*, and shall probably be able to shew, notwithstanding the botanical confusion, that two plants, now removed from this to a new genus, deserve the serious consideration of practitioners.

cayed leaves; but, according to Dr. S. is cultivated with great difficulty in England. It is stated by Martyn, however, to be a native of Europe, Asia, and America. No mention is made by this author of its possessing any medical properties. In Gerard the pyrola is said "to be good for ulcers of the kidnies, especially made with water (the decoction), and the roots of comfrey added thereto." There is, however, a doubt if the pyrola of Gerard or of Martyn be the same as that of Dr. Somerville. But as it is of the utmost importance, as the author properly observes, that the identity of medicinal plants should be satisfactorily made out, he has given a description of this, accompanied with a plate.

XXIII.—"*Case where a Seton was introduced between the fractured ends of a Femur, which had not united in the usual manner.*" By James Wardrop, Esq. F.R.S. Edinburgh.—Some cases are related in which this operation was serviceable; the method of performing it is fully detailed, and a plate of the requisite apparatus is annexed. The facts related are of a practical nature, and well deserve a perusal.

XXIV.—"*Further Observations on the Cataract.*" By Benjamin Travers, Esq. Surgeon.—This memoir is a continuation of one read to the Society last year. It is of considerable length, and does no discredit to the pen of Mr. Travers. It concludes with the following concise summary of its contents.

"I. The various textures of cataract admit of distinction into capsular and lenticular, single or in combination. The lenticular cataract is either fluid, flocculent, caseous, hard, or of mixed consistence.

"II. To the two former and the soft of the caseous species, the operation of forming a central aperture in the capsule, for the solution of the lens in the aqueous humour, is well adapted: to the firm of the caseous species and the two latter, it is inapplicable.

"III. The introduction of the needle through the cornea is preferable to passing it through the schlerotic, in performing this operation; except when, in consequence of a previous operation, or from other cause, the capsule is opake, and the lens has undergone a partial absorption, and lies at a distance from the pupil.

"IV. The operation of couching, which is, strictly speaking, applicable only to firm, caseous, and hard cataracts, is objectionable on account of the injury done to the organ, admitted in the theory of the operation, and evidenced by a destructive inflammation, and an ultimately impaired state of the retina, by which it is frequently succeeded.

"V. Where the space occupied by the aqueous humour is narrowed by the considerable convexity of the iris, the firm cataract may be dislodged from its capsule, placed in the anterior chamber by the needle, and safely extracted by a section of the cornea.

" VI. The fluid, flocculent, soft, caseous and unadhering capsular cataract, congenital or adult, may be safely and expeditiously extracted through a quarter section of the cornea, by freely opening the capsule with the point of the knife, and afterwards depressing the margin of the pupil with the back of the scoop.

" VII. The extraction by a quarter section should never be attempted but in cases where the consistence of the cataract is manifestly soft, as its success depends on the susceptibility of the cataract of a change of figure, or its ready escape piecemeal. It is better adapted to the opake capsule if unadhering, than the operation with the needle.

" VIII. Where the capsule of the fluid, flocculent, and soft caseous cataract is transparent, the operation of extensively rending it and dissipating its contents with the needle passed through the cornea, is efficient, and leaves the pupil in the most perfect state.

" IX. The mixed, firm caseous, and hard cataract require the section of the cornea in its semi-circumference, being unsusceptible of an alteration of figure.

" X. The inflammation which follows the *easy* extraction of the cataract is never hazardous, very seldom severe. That which ensues after the *difficult* extraction, frustrates in a great degree, if not entirely, the object of the operation, though the cataract be completely removed.

" XI. The cause of the difficulty is the insufficient aperture of the cornea; the consequence of it, the implication of the iris with the wound of the cornea, and the participation of the former in the inflammation of the latter: the consequent co-adhesion of the two, and the partial or total obliteration of the anterior chamber, with diffused opacity, greater or less, of the cornea.

" XII. The principle of the operation of extraction is unexceptionable: the section of the cornea should be everywhere about one line distant from the sclerotic; it should be crescentic, and should commence on a level with the superior border of the pupil. The aperture of the capsule should be large and central, by laceration, not by incision of that membrane."

XXV.—" *A Case of Aneurism of the Glutæal Artery, cured by tying the internal Iliac.*" By W. Stevens, Surgeon at Santa Cruz.—No branch of modern surgery has received more striking improvement in a short time than that which applies to diseases of the arteries, with the bold and successful operations which are performed on them. Cheselden doubted the veracity of the surgeon, who asserted that he had tied the brachial artery with success. Bromfield considered tying the femoral as an extravagant operation. Monro believed that it was dangerous to trust to the common anastomosis round the elbow; and apprehended, when success attended tying the brachial artery, that it was owing to a *lusus naturæ*. But surgeons of the present time, not only tye the brachial, but the femoral, the axillary, the subclavian, the carotid, and iliac arteries. To Keate, Abernethy, Cooper, Lynn, Scarpa, and Bell, the profession is indebted for

this surprising advance in British Surgery. An accident compelled Mr. Keate to tye the subclavian artery; the event was successful. Fifteen years ago, Mr. Lynn, under similar circumstances, tied the trunk of the carotid. A. Cooper was the first who ventured this for aneurism. Since this it has often been tied with success. The case here related is one under which, thirty years ago, the patient would have been left to perish. Mr. Stevens claims this to be the first time the internal iliac artery has been tied. "The operation," he says, was neither very difficult nor very tedious. The woman did not complain of much pain, and did not lose an ounce of blood." Some observations on diseases of the arteries, and on the method of tying these vessels, not unworthy the notice of surgeons, accompany this case.

XXVI.—"*Report of the principal Natural Diseases that have prevailed among the Children of the Royal Military Asylum at Chelsea, from its first Establishment in* 1804, *to the* 1st *of January* 1814, *with Remarks.*" By P. MacGregor, Surgeon to the Institution.

The object of this Report has been investigated with care in the *Repository*; and the means furnished to the Editors have been of a nature to give weight to their conclusions. Whether measles, hooping-cough, and scarlet fever, have been more severe since the employment of vaccination, than before the discovery of that prophylactic, is a question of importance. The result of Mr. MacGregor's inquiry "leads to the conclusion, *that measles, hooping-cough, and scarlet fever have not been more fatal, or even more severe, at the Military Asylum, in cow-pox, than in small-pox subjects.*"

We here close our account of a volume which contains much practical information, and many ingenious investigations of subjects interesting to the medical faculty; it is creditable to a Society, the object of which seems to be the improvement of Medical Science.

PART III.

SELECTIONS.

Ottar of Roses.—The usual method of making this, is to gather the roses with their calyxes, and put them into a still, with nearly double their weight of water; which, when sufficiently distilled, will be highly scented with roses: it is then poured into shallow earthen vessels, and exposed to the nocturnal air; the next morning the ottar or essential oil, ex-

tracted from the flowers, is found in small congealed particles, swimming on the surface: it is carefully collected and preserved in small glass bottles. One hundred pounds of roses seldom yield more than from two to three ounces of this precious essence, which it is difficult to procure unadulterated; as the distillers frequently put sandal-wood, scented grass, and other oily plants into the still, which depreciate the value and debase the fragrance of the rose. The genuine ottar is of different colours; sometimes green; frequently of a bright yellow, like amber; and often of a reddish hue: the rose-water which remains, is generally very good.—*Forbes's Oriental Memoirs*, vol. iii. p. 139.

PART IV.

FOREIGN MEDICAL SCIENCE AND LITERATURE.

PHYSIOLOGY AND PRACTICE OF MEDICINE.

I.—The *Société Médicale d'Emulation* of Paris has published* the following curious case of Dæmonomania†, which occurred at Sessa, in the kingdom of Naples, in the beginning of February 1812. The case was reported to the Society by *M. Berthollet*, Physician to the Forces.

"The patient was a woman, upwards of thirty years of age, of a firm and robust constitution, who had never before had any affection analogous to the disease under which she now laboured, and which undoubtedly originated in the following accidental circumstances.

"In the kingdom of Naples a custom exists of preaching

* *Journal de Medicine, &c.* tome xxxii. p. 149.

† To those whom curiosity may lead to investigate this curious subject, we would recommend the perusal of the following works:—Alberti Diss. de Potestate Diaboli in Corpus humanum, Hal. 1725: Westphal, Pathologia Dæmoniaca, Lips. 1707: Ephem. Nat. Cur. passim: Petri, Pr. de Historia duorum Gadarenorum δαιμονιζομενων, &c. Erf. 1797: Hoffman, Diss. de Potentia Diaboli in Corpus humanum: Opp. t. v. p. 94: Mead, de Medicina sacra, seu Morbis biblicis, Goett. 1748: Fell on Dæmoniacs, Lond. 1779.—Editors.

in favour of *missions*, by a set of priests called missionaries; who preach at different times, in different places, during a stated period. In order to animate the faith of believers, they accompany their orations with particular acts, which are often of such a nature as to produce too powerful an effect on weak minds. Thus they hold their hands over flaming torches, whip themselves with scourges garnished with iron points, &c.: and, if these means be not sufficient to move their auditory, they enjoin tears; and the good women know, before going to hear them, that they must weep when the preacher indicates the proper moment. These sermons are always prolonged until the close of day, and generally include half an hour or an hour of the night, when the feeble glare of a few flambeaus heightens very much the effect of the scene.

"One of these sermons occasioned the disease I am about to relate. The subject was *Hell* (l'Enfer); and to heighten the colouring of the frightful picture the preacher had traced, he took a skull in his hand, and having raised a doubt regarding the abode of the soul to which it had belonged, he exclaimed, invoking it, "If thou art in heaven, intercede, &c. If thou art in hell, curse, &c. &c." He then cast it from him with such violence, that from that moment a morbid change took place in the system of the lady who is the subject of this relation.

"During the first day she had head-ache; and passed an agitated night, with scarcely any sleep; but with such frightful dreams that watching was desirable.

"On the second, having voided some worms in the morning, a vermifuge and laxative were exhibited, which procured several stools; but although she passed a calm evening, this night was as much disturbed as the former.

"3d. A practitioner of the country prescribed an emetic, but it produced no benefit. In the afternoon she raved about Paradise; could think only of God; dreading to appear before him; and imagined herself already about to be plunged into Hell. During the night she believed she was damned, and that the Devil and all his satellites were seizing her; she was furious, and wished to fight with every person near her, not excepting her husband, whom she tenderly loved.

"4th. This day I was requested to see her. Her face was convulsed, her look menacing and furious; she was extremely agitated, and seemed desirous of doing me some mischief. Being restrained by force, and feeling the impossibility of hurting me, she regarded me with a fixed look, and seemed to hesitate whether she should answer me. After a few seconds, however, she spoke: 'What succour,' said she, 'can you afford to a woman who is in the power of a demon, and is consumed by a fire which mortals cannot extinguish.' I did not

endeavour to combat her opinions, fearful of irritating her too much; but stated that we would endeavour to moderate her sufferings, to effect which, however, it was necessary to hear some account of them. She complied with my request only after I had assured her that I was no stranger to the infernal mysteries. 'Then,' said she, 'a most intense head-ache oppresses me, and there is a devouring furnace of fire in my stomach.' No other answer could be obtained; except, that she added, the appearance of her stools had convinced her of the nature of her evils. The means which I proposed were rejected; the idea of a bath was horrible to her: 'the fire which consumes me,' said she, 'will only burn more strongly.' But after reflecting for some time, she said to me, 'I will take the bath; it is a proof I wish to give you; as the fire which consumes me will be then visible to you, and you will no longer doubt of my situation.'

"The bath being prepared, she entered it, and for a short time remained quiet, but soon desired to be taken out, and declared that she could no longer endure the flames that consumed her. Thinking that an application of ice on the head might be useful, I informed her it would be necessary to shave the head. The proposal rendered her furious; but after informing her that the hair increased the power of the fire which occasioned her head-ache, she with great reluctance consented that it should be cut. A bladder filled with ice and muriate of soda was instantly applied. She experienced almost instantaneous relief, and became gradually calm; yet, she supplicated that it might be taken away. I ordered the attendants to prevent her from removing the cap; and to change it frequently, in order to keep up the cold. Orangeade was given to her when she asked for drink; and she also took some spoonfuls of a quieting potion. Towards evening she appeared much more tranquil, and, although the idea of the demon still occupied her mind, her delirium was less furious. She now refused any thing to drink: the pulse was quick and very irregular.

"5th. The ice cap had been removed in the morning before my visit. Her rage had increased; her look was much wilder, and the pulse considerably accelerated. I desired the ice to be again applied, which was done by force. After the application, she again became calm, and took during the day some soup, and a little orangeade. In the evening she denounced, with a loud voice, all kinds of imprecations against the Deity; and insulted her brother, a priest, who came to visit her. I ordered a larger surface to be covered with the ice; and her chamber to be cleared of every religious emblem, the sight of which only increased her fury. Unknown to me, and

against my orders, they attempted to exorcise her: but the officiating Capuchin gained only abuse. She appeared as if mad *(enragée)*, wished to bite every one who approached her; and insisted on seeing her infant, that she might devour it. This night was passed without sleep.

" 6th. This day there was a slight remission of the violent symptoms. I applied synapisms to the feet, and continued the ice which covered the whole of the forehead and the temples. The pulse became more regular; the urine less red; and she had a sufficiently copious stool. She had no desire for any thing but orangeade.

" 7th. She was much more calm; but wished to reason about Hell, and treated my answers as foolish; after which she maintained silence for the whole of the day, and took only a little light broth. In the evening she complained of the ice which was on her head. It was accordingly removed; but finding that the delirium very soon increased, I ordered it to be re-applied. As she would drink nothing, I proposed the exhibition of a glyster: she smiled at the proposal, and consented only on my declaring that it would extinguish the fire in her body. The glyster procured three stools in the night.

" 8th. She requested, with much composure, that the ice should be removed; and on my complying with her request, thanked me. Two hours, however, had scarcely elapsed, when she became again furious; assailed me, when I arrived, with the most obscene language; and, on my offering her some drink, threw down the goblet. In the evening the application of the ice cap rendered her calm; and she had a little sleep. The pulse was quiet in the morning, but very irregular and much quickened towards evening.

" 9th. In the morning she desired to see the Grand Vicar, declaring that if he came to converse with her, she should cease to be damned. He arrived, when she discussed the question with warmth; but the wit of the churchman affected no change in her situation. She asked for and drank a little wine and water. In the evening she took a composing medicine: the pulse was more regular and a little better. She had some hours sleep.

" 10th. Calm. She spoke with confidence to her husband, and promised to obey my orders. I made her drink a glass-full of a purging potion; which produced several stools during the day. In the evening, however, the demoniacal ideas returned; but the ice cap being again applied, diminished the fury of the paroxysm. The pulse was regular enough, and slower; and she had some hours sleep.

" 11th. The morning was calm; but she scraped her tongue violently; and having detached some coloured spots, shewed them to me, to convince me that she was consumed by

infernal fire. She beseeched me to allow her to burn; and refused to take any thing. At mid-day, she requested that the ice might be removed from her head to her feet, which she said were burning (the effect of the synapisms). She sung with a loud voice, "*have pity upon a damned soul;*" and nothing could prevent her from singing these words without intermission. She would not answer any questions. The weather during the night was stormy, with several peals of thunder; one of which was so particularly loud, that she was agitated and frightened, and recommended herself to God. She desired to be placed on her knees, asked for a priest, and requested every one to pray. By this revolution, the Devil was thrown out.

"12th. I found her calm and devout; she begged that I would pardon whatever she had said to me during her illness; and beseeched that her expressions should be sincerely forgotten. I ordered the ice to be removed; and gave her a purging draught, which procured many stools; she became perfectly tranquil, and fell into a refreshing sleep.

"13th. I paid her my last visit, as I perceived my presence recalled circumstances which required to be forgotten. I gave directions regarding her convalescence, and requested that none who had witnessed the scenes of her state of dæmonomania should be near her. She was removed to Naples, and has had no relapse; but she appears fonder of solitude than before the attack.

"In this disease, therefore, which terminated in the eleventh day, no other remedy was employed than the application of ice, which produced a marked and beneficial effect; and some laxatives, which, judging from the nature of the stools, appeared to be useful; but the delirium continued until the violent agitation occasioned by the noise of the thunder terminated the disease.

"It was impossible to follow any plan of internal treatment, as the patient would not submit to it."

II.—*Dr. Gælis*, a German Physician, states, that he has lately cured several cases of that peculiar cutaneous affection which is denominated *skin-bound;* and which, although a rare disease in this country, appears to have been lately rather prevalent in Germany. The remedy on which he relies is the *antisyphilitic tincture of Besnard*, of which the following is the formula, given in the Medico-Chirurgical Journal of Salzbourg, for 1811 (*vol. iii. p.* 253).

℞ Salis Tartari depurati
Aquæ Cinnamomi simplicis ā ā libram unam;
Opii purissimi uncias duas;
Aquæ Cinnamomi cum vino uncias quatuor.

Separatim solvantur, dein misceantur invicem, et stent in balneo

marinæ per tres hebdomados, sæpius agitando. Dein coluturæ admisceantur,

Gummi Arabici electi unciæ duæ;
Salis alcali volatilis uncia una;

In aquæ cinnamoni simplicis unciis sex solutæ. Omnia in se mixta stent in vase bene clauso per aliquot dies in quiete, dien filtrentur et serventur usui.

The author recommends it to be given to adults, in syphilitic cases, in doses of from twenty to twenty-four drops, in a cupful of cold decoction of bark three times a day, or seldomer, as the symptoms disappear. This tincture is employed also externally as a local application to chancres.

CHEMISTRY.

III.—The introduction of the *Lichen Islandicus* into the list of Materia Medica of the London and the Dublin Pharmacopœias, and the high character of *Berzelius* as an analytical chemist, lead us to believe that a translation of the following paper, by him, intitled, "*Researches on the nature of Lichen Islandicus, and its employment as an article of diet,*" will be acceptable to our readers*.

"This remarkable species of lichen, which was first used in Iceland, has been long known amongst us as one of the best nutritive and strengthening medicaments. Physicians daily employ it with the greatest success in chronic diseases, attended with marasmus, and in which the stomach is so weak and irritable, that the patient cannot be supported by the ordinary kinds of diet. In many cases, this remedy not only sustains the patient, but even renders him corpulent. The well-known fact, that the Icelanders collect the lichen as an article of food, has excited many persons to attempt to cultivate it in Sweden. Urban Hjerne strongly recommended the dietetical use of it; but the bitter principle which it contains renders it disagreeable to the palate; and is probably the cause which has limited the employment of it to medical purposes.

"Since Hjerne's time, many experiments have been made on Lichen Islandicus; those of Proust, in particular, merit our attention†. This chemist having observed that it abounds in Spain; and a scarcity having been experienced in many of the Spanish provinces at the beginning of this century, followed by very severe epidemic diseases, he endeavoured to introduce it as food.

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* The original appeared in Schweigger's Journal, vol. vii. p. 317; but our translation is that of a French translation of it, published in the *Annales de Chimie,* tom. xc. p. 277.

† *Journal de Physique de Delametherie,* 1806.

" The experiments of M. Proust were afterwards repeated by M. J. R. Westring*, Physician to the King of Sweden; who succeeded better than M. Proust in freeing it from its disagreeable bitter.

" The following is an abstract of M. Proust's Essay:—Bruised Lichen Islandicus being soaked in cold water, the greater part of the bitter principle was extracted, and the lichen lost 0.03 of its weight. Hot water extracted the bitter more quickly; but took up, at the same time, nearly 0.03 of the nutritious matter; a loss, however, which was amply compensated by the greater quickness of the process†. Boiling the lichen with water for a quarter of an hour, softened it completely, and the water became charged with all its soluble parts. By this process one pound of the lichen yielded three pounds of a substance which might be converted into food. The membranous part of the plant is so much softened by the boiling, that it almost melts in the mouth, and may be eaten as readily as the tenderest cartilages of young animals. The boiled lichen, after being dried, keeps extremely well; and to prepare it as food, it is only necessary to steep it in hot water, either fresh or salted. Lichen islandicus thus prepared may be carried to sea instead of green vegetables, which cannot be had on board of ships; and might be of great importance when a crew is menaced by scurvy. M. Proust prepared the lichen in various methods, and obtained an agreeable article of diet under different forms.

" The analysis of this chemist found the lichen to consist of 0.03 of a bitter principle, soluble in cold water—0.33 of a matter resembling gum, soluble in boiling water, which gelatinized on cooling, and was precipitated by tannin in the same manner as gelatine—and 0.64 of a fleshy insoluble substance.

" M. Westring, besides his researches on the colouring principle which may be extracted from lichen islandicus, published an analysis of the plant. According to him it contains *gelatine, gum*, a *bitter principle, resin, albumen*, and *colouring matter*. It is nevertheless true that some of these substances are not at all found in it: but his statement, that an alkali extracts the bitter, is correct, a remark which very much facilitates the preparation of lichen for food. The other experiments of M. Westring on the preparations of this plant for the purposes of diet, are similar to those of M. Proust.

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* *J. P. Westring's Svenska Lafvarnas Forg. Historia*, 1 *Bol.* 6 *Hêft.*

† It will be afterwards demonstrated that M. Proust was mistaken on this point.

" A.—*Analysis of Lichen Islandicus.*—Some of the lichen being steeped in cold water, in twenty-four hours the water contracted a brownish yellow colour, and a bitter taste. The first water having been decanted off, the fresh portion, which was added, acquired, in the same space of time, a similar colour and taste. This process is required to be many times repeated, before the whole of the bitter of the lichen is extracted. If it be dried and pulverized before being steeped, the water becomes more fully charged with the bitter, and more deeply coloured; but even in this case the infusions must be frequently repeated to extract all the bitter. If hot water be employed, the bitter is certainly more quickly extracted; but it is not completely separated even when the lichen has been boiled in several fresh portions of water, the last decoction, as well as the insoluble residue, being still bitter. The bitter principle is scarcely soluble in water; but the small quantity that the water dissolves communicates to it an insufferable bitterness.

" At the mean temperature of the atmosphere the lichen is soft and flexible; but dried in a moderate heat, it hardens, becomes brittle, and very friable.

" 1. Upon 40 grammes of the lichen, dried and roughly pulverized, 1 litre and a half of water was poured, and the mixture left at rest for twenty-four hours, in a temperature of 20°, after which the infusion, which was of a bright yellowish brown colour, was filtered. The residue was again infused, and the liquor of both the infusions mixed together. The following are the results of the preliminary examination of the infusion.

" *a.* The fluid was of a bright yellowish brown colour, almost inodorous, and very disagreeably bitter.

" *b.* It instantly reddened the tincture of litmus; but litmus paper was not affected by it until after some seconds. The presence of a free acid in the infusion was thus made obvious.

" *c.* It was rendered slightly turbid by muriate of barytes; but the precipitate was not deposited, and had the appearance of sulphate of barytes.

" *d.* Crystals of nitrate of silver dissolved in it, without affecting the transparency of the fluid; hence it did not contain any muriate. After some hours, the infusion acquired the colour of red wine.

" *e.* Oxalic acid threw down a little oxalate of lime.

" *f.* Acetate of lead, with an excess of base, produced a yellow precipitate, the supernatant fluid being almost colourless.

" *g.* Nitrate of mercury at a minimum produced nearly the same effect.

" *h.* Subcarbonate of potass deepened considerably the colour of the infusion.

" *i.* Sulphate of iron changed the colour to purple. Solution of isinglass produced no precipitate: hence the lichen contains no tannin, and a small quantity only of gallic acid.

" *k.* Lime water produced a precipitate which was slowly deposited, and became blackish-brown: it was collected upon the filter, dried, and burnt. The residue dissolved with effervescence in muriatic acid, forming a solution, from which ammonia precipitated phosphate of lime. The first-mentioned precipitate, therefore, was formed of phosphate of lime and lime combined with a vegetable acid, and coloured by extractive.

" 2. The infusion being evaporated, its colour was much deepened, and at last the fluid became perfectly opaque. The residue weighed 2·18 grammes, was of a deep brown colour, and resembled an extract; and alcohol being poured upon it, took up a little of a yellowish brown matter. I submitted this coloured spirit to distillation: when it left a residue which weighed 1·5, and by continuing the evaporation in an open vessel, became very viscid, but was with great difficulty completely dried. This residue was soluble in water, with the exception of a reddish brown pulverulent substance, which I had already seen deposited towards the conclusion of the evaporation of the alcohol. Of this powder 0.1 was obtained; its taste was bitter, and it probably proceeded from the bitter principle of the lichen.

" 3. The aqueous solution deprived of this powder was evaporated in a glass vessel; it left as a residue 1·5, of a brown syrup. Its taste resembled that of syrup of malt, leaving a sharpness upon the tongue similar to that of a vegetable salt. This syrup being re-dissolved in water, was precipitated by acetate of lead with an excess of base; and the supernatant fluid, which was of a deeper colour than before the precipitation, being deprived of any oxide of lead by means of carbonate of ammonia, was filtered. By evaporation, it gave a syrup of a brighter colour than that already noticed; its taste was faint, but it left a sensation of greater acrimony on the palate; the oxide of lead had abstracted from it a small portion of extractive to which it owed its brown colour.

" 4. The part which the alcohol did not dissolve, weighed 0·38; it was of a brown colour; dried readily, and was changed into a hard brittle mass. Water dissolved it, with the exception of a small portion of extractive. Oxalate of ammonia precipitated from it some oxalate of lime. This part, therefore, contained the earthy salts, which existed in the lichen. The extract was insipid; re-acted like an acid, and discovered generally the properties characteristic of the part of extracts insoluble in alcohol. After having precipitated the solution by oxalic acid, it was evaporated, and the residue burnt in a platinum

crucible. The ashes which resulted, rendered water slightly alkaline; and after being neutralized by nitric acid, lime water precipitated a little phosphate of lime, the quantity of which, however, was too small to correspond with the quantity of lime thrown down by the oxalic acid. The extract, therefore, besides phosphate of lime, contained a salt with a base of lime united to a combustible acid.

" 5. Upon the lichen deprived of those parts which are soluble in cold water, one pound and a half of water in which I had dissolved one gramme of crystallized carbonate of potass was poured, and the mixture left at rest for twenty-four hours, in a temperature of 20°. It was necessary to repeat this washing three times, to free the lichen from the whole of its colouring matter. All these alkaline infusions, which were very bitter, and weighed six pounds, were evaporated to dryness in a porcelain capsule. During the evaporation, the colour gradually changed to a deep brown, and finally became black; and a hard brown mass remained, which had not the smallest degree of bitterness. This residue was completely insoluble in alcohol, so that after having saturated the potass with acetic acid, I separated the acetate of potass which was formed by means of alcohol. The remaining extract, which was scarcely soluble in water, was of a bright brown colour; it swelled up and formed a thick pap, which could, with difficulty, be passed through the filter. The remaining lichen, freed from the water and alkaline liquor, weighed 35 grammes after having being dried. The water had extracted 2·18, and therefore 2·82 had been taken up by the alkaline solution.

" 6. I now boiled the residue of the lichen with two pounds of water, for an hour; after which, the mare was thrown upon a piece of cloth which had been previously weighed; and expressing it, one pound and a half of a clear yellowish brown liquor was obtained, which lost its transparency by cooling, and gelatinized. The residue of the lichen was then submitted to three separate boilings, with an equal quantity of water, but the resulting liquors did not gelatinize. The insoluble mass puffed up, was of a grass-green colour, and resembled half coagulated white of egg. It changed in drying to a blackish green, became hard and cracked, presenting a vitreous fracture. The cloth upon which it was dried, had gained 14·28 grammes in weight.

" 7. The coagulated gelatine giving out a small portion of fluid, determined me to put it upon a cloth; when the fluid being drained off, a black hard substance, which weighed eleven grammes after complete desiccation, remained upon the cloth. The fluid which had escaped was now added to the three last decoctions *(b)*, and the whole evaporated. During

the evaporation, a pelicle formed, which gradually augmented, until it fell to the bottom and was formed anew. The dry residue weighed 9·94. Cold water poured upon it rendered it viscous like soap or starch, and dissolved a part of it. After evaporating the water, and completely drying what remained in the capsule, I obtained 0·45 of a gramme of a yellowish brown substance; which, on having cold water added to it, first swelled, and then dissolved, forming a viscous fluid. Both acetate of lead and alcohol precipitated this solution; and tannin rendered it slightly turbid, thence indicating the presence of gum. Alcohol poured into the solution to which the tannin had been added, afforded a precipitate, which agglutinated, became leathery, and had all the characters of fecula precipitated by galls. This precipitate divided without dissolving in cold water. It is well known that gum is not precipitated by tannin; but alcohol attracts tannin when it is mixed with gum, leaving the gummy particles untouched. As no gum was found in the infusion, I supposed it to be a product of the boiling; but we reserve till afterwards the examination of this part of our subject.

" 8. The insoluble part of the lichen was now treated with boiling alcohol; which took up a small quantity of green wax, but not the smallest portion of resin.

" The following may be regarded as the results of the foregoing experiments :—

	grammes.
Syrup mixed with a little extractive, and a small quantity of a vegetable salt	1·5
Bitter principle	0·1
Extractive soluble in water united with a salt, having lime for its base	0·58
Extractive soluble in carbonate of potass	2·82
A coagulable substance resembling gelatine	20·23
Gum formed by the boiling	0·49
Insoluble remains	14·00
	40·00

" As the quantity of many of the substances in this analysis were not very accurately ascertained, the salts being left united with the extract, and the greater part of the bitter principle destroyed by the alkali; I repeated the analysis in a different manner.

" 1. Ten grammes of lichen islandicus, dried and powdered, were digested in four ounces of alcohol for twenty-four hours, after which the mixture was boiled for a quarter of an hour; the alcohol when decanted was of a pale greenish brown (brune-verdatre) colour. This process was repeated till the

alcohol no longer acquired any colour. The lichen had completely lost its green colour and become grey.

"9. The different decoctions being united, the mixture was distilled until two ounces only remained in the retort: and this residue being evaporated to dryness in a plate-glass capsule, a greenish brown pulverulent substance, soft to the touch, coherent, and weighing 0·99, was obtained.

" 3. This powder was treated with tepid water, and the mixture filtered; the undissolved portion which remained upon the filter, after being well dried, weighed 0ᵍ·46. The liquor which passed through yielded, when evaporated, a syrup mixed with crystals: it remained tenaceous, and weighed 0ᵍ·59.

" 4. Alcohol being added to separate the crystals, it dissolved the syrup, leaving the saline crystals and a little brown extract. Water dissolved the extract and one part of the salt, but the other part, which was perfectly white and weighed 0·09, remained untouched. This white residue had an acidulous bitter taste, was scarcely soluble in the saliva, and reddened litmus paper; when strongly heated, it was carbonized, and exhaled an acid empyreumatic odour: its charcoal was spongy, and by incineration furnished a considerable quantity of potass of tartar. If during its combustion it did not exhale exactly the same odour as that salt, this must be attributed to a portion of extract from which it could not be altogether freed.

" 5. The aqueous solution (4), when evaporated, furnished a yellow-brown crystallized mass, weighing 0·1, which had also the properties of tartar. As all tartar contains tartrate of lime, I re-dissolved this salt in water, and added oxalate of potass as long as any turbidness was produced. The precipitate was considerable for the small quantity of tartar employed. Having evaporated the fluid separated by filtration, the residue was incinerated and dissolved in water; and to this solution, saturated with muriatic acid, I added lime-water in excess. After some hours an inconsiderable quantity of phosphate of lime was deposited; consequently the 0ᵍ·09 of acid salt was acidulous tartrate of potass, mixed with a little tartrate and phosphate of lime. Supposing that this saline substance might also contain tartrate of ammonia, I procured some of it for a new experiment, and mixed it with quick lime; it disengaged an unpleasant odour, which was scarcely ammoniacal.

" 6. The alcoholic solution (4) had a bitter taste: evaporated to dryness in a gentle heat, it left a residue of 0ᵍ·4, which dissolved in water as in the first analysis, with the exception of a brownish powder. The aqueous solution had a sweetish taste, and furnished by evaporation a syrup similar to that already mentioned. The syrup was freed from extract by acetate of lead, and the superabundance of this salt removed by

passing through it a stream of sulphuretted hydrogen gas, after which it was evaporated. After these operations it remained of a pale yellow colour, and weighed 0^{g}·36; but in a more elevated temperature acquired a brown colour, contracted a disagreeable odour, and lost its saccharine taste.

" 7. Alcohol being added to the 0^{g}·46 of the matter which remained insoluble in water (3), the spirit acquired a deep green colour, and left a bright yellow powder which weighed 0^{g}·22; and which I regarded as the bitter part of the lichen free of all admixture. The alcoholic solution when evaporated yielded a somewhat pulverulent mass, which was green vegetable wax, the taste and look of which, however, indicated that it contained a considerable quantity of the bitter principle. I attempted to separate the two substances, both by means of ether and carbonate of potass; but did not completely succeed: the ether dissolved a little of the bitter, the potass a considerable quantity of wax. The ether left a residue of 0^{g}·06 of the bitter, but 0^{g}·18 of the wax which it had dissolved still contained some of the bitter. These 0^{g}·46, therefore, contained 0^{g}·27 of the bitter, and 0^{g}·19 of wax: but, without being greatly wrong, the quantity of the bitter may be supposed 0^{g}·3, and that of the wax 0^{g}·16.

" 8. The residue of the lichen left by the alcohol was several times treated with water at +35°. This water acquired a bright yellowish brown colour, and yielded by evaporation 0^{g}·33 of a brownish yellow transparent mass, nearly insipid, leaving a little acrimony on the palate: put into water, it became at first viscous and demi-opaque, like the gum; after which it melted, leaving a residue of brown pulverulent extractive. The solution did not discover any acid character; and salt of sorrel threw down in it a copious precipitate, shewing that it contained a salt, the base of which was lime. I at first imagined it to be malate of lime; but as the last infusion contained as much of it as the first, it was consequently a less soluble salt; and I afterwards ascertained that it was tartrate of lime. Acetate of lead, with excess of base added to the solution, produced a precipitate; and the addition of an alkali deepened its colour. The quantity of tartrate of lime was too small to be correctly ascertained. The matter dissolved in the water retained some gum and extractive; but, nevertheless, it approached nearer to the former.

" 9. The watery extract of the lichen being digested for twenty-four hours, at a temperature of 35°, in a pint of water in which two grammes of crystallized carbonate of potass was dissolved, the liquid became less brown. After having decanted the infusion, I washed the lichen with many fresh quantities of water; and putting all together, evaporated at a gentle heat, adding, during the process, acetic acid to saturate the

potass. I obtained a blackish brown residue, which I diluted with water, after which I added some alcohol, which I renewed at the end of twenty-four hours. The first portion of alcohol had acquired a slight yellow tinge; the second was colourless: on submitting the alcohol to distillation, it deposited upon the sides of the retort small and large crystals of tartrate of lime. It is evident that this salt dissolves in potass without being decomposed. Acetate of potass, of a light yellow colour, remained in the retort. The extract, of which I obtained 0·7, was changed by the action of the alcohol into a mass resembling gluten; it became hard, brilliant, and brittle by drying.

"The residue left by the solution of carbonate of potass was boiled in several waters. The coagulated part of the decoction, well freed from the adhering liquid, and dried, weighed $2^{s}\cdot28$. The fluid part, after evaporation, left $2^{s}\cdot18$ of residue; 0·66 of which was found to be soluble in cold water.

"11. The insoluble residue weighed $3^{s}\cdot62$.

(To be continued.)

PART V.

MEDICAL AND PHYSICAL INTELLIGENCE.

I.—LECTURES AND SOCIETIES.

LECTURE VI.—*History of the Proximate Principles of Animals, continued.* By Professor BRANDE, at Apothecaries' Hall, London.

Mr. BRANDE said, that in his present lecture he should continue the chemical history of the proximate parts of animal substances: that in his last lecture he had detailed, at some length, the characters of *albumen* and *gelatine*, as forming the essential ingredients of the greater number of the soft solids of animal bodies; that he had demonstrated the abundant existence of albumen in the blood, and pointed out the characteristic properties which it confers upon that fluid; and that the non-existence of gelatine in the blood had been satisfactorily ascertained: gelatine, therefore, must be regarded as a true secretion—as a product formed from the blood by the hidden operation of the secretory organs. He should now examine the properties of *milk*, *bile*, and *urine*.

Milk is different, not only in different animals, but also in the same animal at different periods, and under different circumstances. Thus it is influenced by the diet, the state of digestion, and general health, and by the length of the period after delivery.

The properties of cows' milk had been most fully ascertained.

Like the blood it is at first an homogeneous fluid; but when removed from the body it soon suffers change. The first alteration it undergoes is the separation of an oily fluid, which was originally diffused through the milk in the manner of emulsion, called the *cream.* The separation of cream is said to be influenced by the contact of air, and to be rapid in proportion to the extent of surface exposed. The quantity is liable to variation: but some cows, for instance the Alderney breed, are celebrated for yielding it in abundance. A moist soil, and succulent herbage, diminish the proportion of cream. Cream is composed of some of the more watery part of the milk, with the true oily matter called butter, which may be separated, nearly pure, by the process of churning. Butter possesses the general properties of fatty matter. It is fusible, and soluble in spirit of wine and in ether; insoluble in water; susceptible of rancidity. This last property is connected with the presence of other parts of the milk; for when there is much butter-milk left in the butter, it spoils very rapidly; and when butter has been melted and skimmed, by which some impurities are separated, it does not so soon become rancid. Butter is very nutritious, and in its natural state seldom disagrees; but when melted, or oiled, as it is called, and when rancid, which it often is in pastry and greasy dishes, there are many stomachs which cannot bear it.

When milk is kept for some hours, at a temperature of 80°, it undergoes other changes, of which the most obvious are the production of an acid, and the consequent coagulation of the curdy part. The acid thus produced may be separated by distillation; it proves to be the acetous; though at one time regarded as a peculiar acid, and called the lactic acid. A little vinegar, or other weak acid, added to fresh milk, effects a change similar to this which is spontaneously produced. This coagulation may be speedily effected in new milk by the substance called *rennet,* which is prepared of the interior coats of the fourth stomach of the calf. The glandular structure of the stomachs of all animals appears possessed of this coagulating power, but the modus operandi is unknown. The properties of the curd of milk are in all respects similar to albumen. It forms soaps with the alkalies; when coagulated, it is insoluble in water. It is generally more soluble in alkalies and acids than the coagulated white of egg: but this does not constitute any chemical peculiarity, but rather depends upon its inferior state of induration. It is coagulable by electricity, with precisely the same phenomena as other varieties of albumen. The curd of milk, when first separated, is insipid; but when kept for some time, it acquires a peculiar odour and an acrid flavour. In this state it is better known under the name of *cheese;* to which, however, a large portion of cream is often added, especially for those cheeses which are rich and greasy; and which, when toasted, soften or liquify. Poor cheese, when heated, dries up, and crumples like horn, it being little else than albuminous matter.

The third part of the milk requiring notice is the *serum* or *whey;* it is a sweetish and nearly colourless fluid, remaining after the separation of the cream and curd, and consists chiefly of water

holding a peculiar principle in solution, which from its analogy in many respects to sugar, has been called Sugar of Milk.

Sugar of Milk is prepared in some parts of Switzerland upon a large scale, and is used for food and medicine. It is best procured by evaporating fresh whey from skimmed milk to the thickness of syrup, which is to be re-dissolved, clarified, and again evaporated, when it yields rhomboidal crystals of sugar of milk.

Sugar of milk is a sweetish substance, soluble in about twelve parts of cold water; when burned it appears more like vegetable than animal matter, and leaves a coal containing muriate and carbonate of potass.

Sugar of milk, when acted upon by nitric acid, yields a portion of a peculiar acid substance which has been called saccholactic acid. A similar matter is afforded from gum; hence it has also been called mucous acid. Its properties have been investigated, but they are not of any interest to our present subject.

Milk is susceptible of vinous fermentation.

The koumiss of the Tartar tribes is a species of wine, prepared from the whey of mare's milk; and if the experiments upon this subject be correct, the vinous fermentation is independent of the decomposition of the sugar of milk.

The milk of other animals has not been examined so frequently, nor with the same precision as cow's milk.

In human milk the cream is comparatively abundant, and there is a relative deficiency of the coagulable part: it is also particularly liable to change of composition from the affections of the mind and body.

Asses' milk comes nearest in properties and appearance to that of the human species; and the milk of the sheep nearly resembles that of the cow.

Bile is a secretion of great importance in the animal œconomy; one of the largest viscera is concerned in its formation, and it is peculiar as being separated from venous blood. The external characters of bile are well known; its chemical properties have been ascertained with considerable precision: it owes its property of coagulating by acids, alcohol, and electricity, to the presence of albumen, the relative proportion of which is subject to considerable variation. It likewise contains a peculiar resinous principle, of an acrid bitter flavour, and a considerable quantity of soda. In some experiments upon ox-gall I found the proportion of albumen vary from 0,5 to 3 per cent.; and that where the proportion of albumen was small, there is also a relative small proportion of resinous matter. The average contents of 1000 parts of ox-bile are,

Water	8 to 900
Albumen	20
Soda	8
Resin	35
Saline matter	18

Thenard has found in bile a peculiar saccharine principle, somewhat resembling sugar of milk.

The *Urine* is one of the most complex of the secretions, and its correct analysis a matter of considerable difficulty. It is subject to numerous variations of composition; some of these are constantly ensuing, and depend upon the nature of the food and drink, others are the exclusive products of disease.

The most remarkable character of the urine is its tendency to putrefaction; and during that process an immense quantity of ammonia is generated, so that the excess of acid always to be observed in healthy urine, becomes neutralized, and a new series of ammoniacal compounds are formed. These peculiarities are chiefly derived from an ingredient in urine, called Urea, which may be obtained by evaporating urine to the consistency of honey, and then pouring upon it three or four times its weight of alcohol: the urea is thus separated from the other ingredients, and by distilling off the alcohol it may be obtained, though in an altered state, by the application of heat. It appears in the form of crystalline plates of a fetid smell, and very soluble in water: this solution is very prone to change, and soon produces abundance of ammonia. Nitric acid converts urea into a peculiar shining crystalline substance. Sulphuric acid resolves it into its elements. Its leading ingredients are Nitrogen and Hydrogen, but it also contains carbon and oxygen.

The free acid observed in recent healthy urine, consists of a mixture of urine, phosphoric, and carbonic acids. The former is often deposited in red crystals, and frequently collects in such quantities as to produce concretions in the urinary canal. The phosphoric acid may be detected by the addition of lime water, and the carbonic acid by the application of gentle heat, which drives it off unaltered. This excess of acid in urine maintains its transparency by keeping phosphate of lime, and some other earthy salts, in solution.

The saline ingredients of the urine are very numerous: the principal are, phosphate of lime, ammoniaco-magnesia-phosphate, phosphate of ammonia, and muriate of soda. Some albumen and gelatine, and minute portions of resinous matter were also occasionally found in urine. Mr. Brande concluded his lecture by observing that any attempts to enumerate the relative proportion of the ingredients he had named, would be fruitless; that they were liable to constant change in this respect, and the analysis was rendered particularly complex and difficult by the danger of mistaking products for educts: of this nature he believed were muriate of ammonia, benzoic acid, sulphur, and some other principles which had been regarded as components of the urine.

Royal Society.—March 2 and 9. The remainder of Sir H. Davy's paper on the Chemical Composition of Paints and Colours used by the antient Greeks and Romans, was read. It appears, that ceruse was never used for white in any of the places examined by Sir Humphry, in the ruins of Pompeii, the baths of Titus, and

other vestiges of antient art, although the antients were acquainted with the acetats: but that their whites were carbonates of lime and fine white clay. Their azure was prepared with natron, sand, and copper. Sir H. states, that 15 parts of soda and 20 of flint, added to copper, produced their blues; cobalt was also used; minium, oxides of iron, and ochres constituted their reds and browns, the latter of which were sometimes mixtures of iron and manganese; their whites were carbonates of lime; their glass sometimes contained manganese; and their blacks were all carbonaceous matter. The colour of the cuttle-fish was likewise occasionally used. The ground on which the painting was executed was powdered marble cemented with lime, which was polished.—March 9 and 16, a paper was read from Dr. Brewster, on the laws which regulate the polarization of light by reflection from the second surfaces of transparent bodies.

Linnæan Society.—At the meeting of the 7th March, a paper was read from Mr. Sowerby, on a branched fossil found in Green Sand, Warminster, to which he proposes to give the name of *pedenculum lobatum:* a figure was also exhibited.—At the same meeting a paper was read from the Rev. Patrick Keith, on the epidermis of plants; in which, after stating the general analogy pointed out by Grew and other early vegetable physiologists, between the epidermis of plants and animals, he examines the doctrine especially supported by M. Mirbel, who regards that substance as merely the external surface of the parenchyma acted upon and hardened by the atmosphere. He then shows that this last opinion is unfounded, and, finally, endeavours to establish the general analogy adopted by the early writers.—A memoir from Dr. Leach, on the distribution of the orders composing the class *Insecta*, with descriptions of some new genera and species, was read.

CLASS INSECTA.

Subclass I.—Ametabolia.

Insects undergoing no metamorphoses.

Order 1. *Thysanura.*—Tail armed with setæ.
Order 2. *Anoplura.*—Tail without setæ.

Subclass II.—Metabolia.

Insects undergoing metamorphoses.

Century 1. *Elythroptera.*—Insects with elytra.
Odontostoma.—Mouth with mandibles.
* Metamorphoses incomplete.

Order 3. *Coleoptera.*—Wings transversely folded; elytra crustaceous, covering the wings, with the suture strait.
** Metamorphoses nearly coarctate.

Order 4. *Strepsiptera.*—Wings longitudinally folded; elytra coriaceous, not covering the wings.
*** Metamorphoses semi-complete.

Order 5. *Dermaptera.*—Wings longitudinally and transversely

folded; elytra somewhat crustaceous, abbreviated, with the suture strait.

Order 6. *Orthoptera.*—Wings longitudinally folded; the internal margin of one elytron covering the same part of the other; elytra coriaceous.

Order 7. *Dictuoptera.*—Wings longitudinally folded twice or more; elytra coriaceous, nervous, one decussating the other obliquely.

Siphonostoma.—Mouth with an articulated rostrum.

Order 8. *Hemiptera.*—Elytra somewhat crustaceous, or coriaceous; towards the apex generally membranaceous, horizontal, one decussating the other obliquely. Metamorphoses half complete.

Order 9. *Omoptera.*—Elytra entirely coriaceous, or membranaceous, and meeting obliquely, with a strait suture. Metamorphoses semi-complete, or incomplete.

Century 2. *Medamoptera.*—Insects without wings or elytra.

Order 10. *Aptera.*—Mouth with a tubular sucking rostrum. Metamorphoses incomplete.

Century 3. *Gymnoptera.*—Insects with wings, but no elytra.

Cohors 1. *Glossostoma.*—Mouth with a spiral tongue.

Order 11. *Lepidoptera.*—Wings four, membranaceous, with pterigostea, covered with meal-like scales.

Cohors 2. *Gnathostoma.*—Mouth with maxillæ and lip.

Order 12. *Trichoptera.*—Wings four, membranaceous, with pterigostea, and hairy.

Cohors 3. *Odontostoma.*—Mouth with mandibles, maxillæ, and lip.

Order 13. *Neuroptera.*—Four highly reticulated wings, generally equal in size; anus of the female without a sting, or compound borer.

Order 14. *Hymenoptera.*—Four venose wings, hinder ones smallest; anus of the female with a sting, or with a compound borer or oviduct.

Cohors 4. *Siphonostoma.*—Mouth tubular, formed for sucking.

Order 15. *Diptera.*—Wings, and haltares or balancers two.

At the meeting of the 21st of March, a paper containing some additions to the Novi Systematis Ornithologici Prolusio, by M. Vieillot, concluded at a former meeting.

Medical and Chirurgical Society of London.—On the 1st of March this Society held its annual meeting for the election of its Officers and Council; when the following Gentlemen were elected: *President,* Henry Cline, Esq. F.R.S. — *Council.* C. R. Aikin, Esq. T. Bateman, M.D. F.L.S. Librarian, C. Bell, Esq. F.R.S. Ed. George Birkbeck, M.D. Sir Gilbert Blane, Bart. M.D. F.R.S. J. Bright, M.D. B.C. Brodie, Esq. F.R.S. Astley Cooper, Esq. F.R.S. Treasurer, A. Henderson, M.D. W. Lawrence, Esq. F.R.S. Secretary, Sir James MacGrigor, M.D. Vice-Pres. A. Marcet, M.D. F.R.S. J. Moore, Esq. J. Pearson, Esq. F.R.S. P. M. Roget, M.D. F.R.S. Secretary, A. R. Sutherland, M.D. H. L. Thomas, Esq. F.R.S. Vice-Pres. J. Ware, Esq. F.R.S. Vice-Pres. S. Winthrop, M.D. J. Yelloly, M.D. F.R.S. Vice-Pres. and Treasurer.

II.—MEDICAL.

Disease resembling Cow-Pox in Sheep.—The following is an extract of a letter from W. Bruce, Esq. Resident of Bushire, to W. Erskine, Esq. Bombay, dated Bushire, March 26, 1813. "Every Eliāāt [a class of wandering tribes in Persia] that I have spoken to on this head, of at least six or seven different tribes, has uniformly told me, that the people who are employed to milk the cattle caught a disease, which, once having had, they were perfectly safe from the small-pox; that this disease was prevalent among cows, and shewed itself more particularly on the teats; but that it was more prevalent, and more frequently caught from the sheep." Mr. Bruce confirmed this account by making inquiries of a very respectable farmer near Bushire.—*Edin. Med. and Surg. Journ. April.*

Leeches.—In our Number for February, p. 164, we noticed that Dr. Clesius, of Coblentz, had asserted, that if a leech be cut through at the tail while sucking, it will continue to suck for a considerable length of time. A correspondent remarks, that this observation is not quite original; as Dr. Paul Barbette, in p. 64 of his *Thesaurus Chirurgiæ*, edition 1676, says: "if they (leeches) draw sluggishly, cut their tails off with a pair of scissars."

Pressure in Rheumatism.—Dr. Balfour, in a paper on rheumatism (*Edin. Med. and Surg. Journal*, vol. ix. p. 168.), has detailed several instances of remarkable benefit arising from pressure by the application of *bandages* in that disease. We have tried the practice; and have found that it affords considerable temporary relief; but does not supersede the employment of other remedies. The idea, however, of using pressure in this disease is not new.

Ox Gall in Diarrhœa.—Dr. Horn, a German Physician, recommends, in cases of obstinate diarrhœa, fresh bullock's gall, at first to the quantity of one drachm in 6 ounces of Aq. Menth. to be taken in the course of twenty-four hours, and gradually to be increased to half an ounce for a dose.

Tussilago a Remedy for Scrofula.—Dr. Hofman, in Rentweinsdorf, states that he has cured a very inveterate scrofulous complaint in a young man seventeen years of age, where anti-scrofulous remedies had failed, by a long continued use of the fresh-pressed juice of colt'sfoot (*Tussilago farfara*), in daily doses of two tea-cups-ful, and a decoction of the dried herb.

III.—SURGICAL.

Amputation of the lower Jaw.—Mr. Robarts, of Burnham, Bucks, has favoured us with the following account of an operation he witnessed at the Hotel Dieu in September last, performed by M. Dupuytron, one of the surgeons of that hospital, in presence of from two to three hundred spectators, and excited very great interest.

The subject of it was a man about forty-five years old, whose countenance exhibited strong marks of suffering. There was nothing visible externally; but, on opening his mouth, a cancerous tumour about the size of a Spanish nut was seen just under the alveolar processes of the lower incisors; and appeared to grow out of the bone. M. Dupuytron began the operation by making an incision

through the middle of the under lip, in the course of the symphysis, extending about two inches under the chin, in a direct line towards the throat. He then reflected the skin on each side to the edge of the masseter muscle; and, sawing through the maxillary bone close to the masseter on one side, and afterwards on the other, divided the submental artery where it was given off, avoiding the angular artery. The sawing was attended with some difficulty, as there was but little room for the saw to work in, and considerable hazard of wounding the tongue, or injuring the opposite side of the mouth by its point. The patient bore the division of the left side with great firmness; but the right side being rather more tedious, occasioned much pain.

The mouth having then been cleared from the blood which occasionally ran down the throat and caused much coughing, the detached bone was wholly removed by an incision from side to side, which passed through, and cut away a portion of the under surface of the tongue, which it was suspected might have been contaminated by its vicinity to and continual motion against the tumour. No great quantity of blood was lost; and the vessels being secured, the reflected lip and integuments were closed by the needle and adhesive plaister; and the most profound silence imposed on the patient, who, on rising from his seat, returned the surgeon and assistants a thousand expressions of gratitude. He only once appeared faint through the whole operation, which, being necessarily divided into stages, occupied some time, and behaved throughout with the greatest courage.

I regret that I had not an opportunity of seeing the man, or of inquiring into his subsequent state; and still more, that I have not been able to ascertain the event of the case, though I have repeatedly requested inquiry to be made by a French Gentleman who accompanied me, but whose engagements, I presume, prevented him; yet, from the composure and firmness with which it was borne, and from its being a part which is often much shattered and as often repaired, I have no doubt but he recovered.

The teeth on each side had either been drawn or had decayed.

IV.—BOTANICAL.

Royal Botanical Garden at Landshut in Bavaria.—This establishment now cultivates 5000 plants, being 2000 more than that of Munich. Last year it sent 7000 packets of seeds to other gardens at home and abroad, and received 2056 packets in return.

Dalhia.—M. Tollard, in his history of useful vegetables introduced within the last ten years into French agriculture, states, that the *Dalhia*, a new plant, the flower of which is a beautiful ornament, is more important for its roots, which are larger and almost as good to eat as the roots of the *topinambour*.

Marine Plants.—M. Lamouroux, of Caen, has published several memoirs on marine plants, considered with respect to their use for the nourishment of men and animals, in political and domestic œconomy, in the arts and comforts of life. It is surprising how many useful or agreeble articles different nations have derived from vegetables so little distinguished; some are directly eaten, or con-

verted into a savoury and nourishing jelly; others furnish an essential support to animals in the frozen regions of the North, and all of them yield soda or manure. A few yield sugar, and others colouring matter for the dye-house; several of them are made into mats, vessels for drinking, and even musical instruments: that called moss of Corsica is a valuable remedy.

V.—TEMPERATURE.

M. Guyton Morveau has been employed for many years in constructing a pyrometer of platinum to measure the higher degrees of heat. He was induced during his experiments to compare it with the mercurial thermometer, and with Wedgewood's pyrometer. The following table (*Annales de Chimie*, xc. 236) exhibits the result of his experiments.

	Degrees of Wedgewood.	Degrees of Fahrenheit.
Mercury melts		—39°
Water freezes		+32
Water boils		212
Bismuth melts		476.99
Tin melts		512.48
Lead melts		611.98
Mercury boils	2°	642.75
Zinc melts	3	705.26
Antimony melts	7	955.23
Silver melts	22	1822.67
Copper melts	27	2205.15
Gold melts	32	2517.63
Welding point of iron	95	6508.88
Cast-iron melts	130	8696.24
Porcelain melts	155	9633.68
Manganese melts	160	10517.12
Macquer's furnace	165	10829.60
Fourneau a trois vents	170	11142.08
Malleable iron melts	175	11454.56
Nickel melts	175+x	11454.56 +x
Platinum melts	175+x	11454.56 +x

Dr. Thomson observes, "If I remember right, Wedgewood's clay pieces were baked in a red heat. If this be the case, it is impossible that the boiling point of mercury, which is below the commencement of Wedgewood's scale, can be represented by 2° of that scale. There is reason to believe from this, that Morveau was not in possession of the true clay pieces of Wedgewood. If so, his determination of the value of Wedgewood's degrees cannot be considered as correct. The melting point of tin is certainly stated too high in the preceding table. Mr. Crighton of Glasgow, whose accuracy is uncommon, found that this metal melts at 442°, and that it melts at a lower temperature than bismuth."

VI.—MISCELLANEOUS.

Apothecaries' Hall.—The arrangements and improvements in the Laboratories, which we announced (see No. 15), being now completed, they may be viewed on the second Tuesdays in May and June, between the hours of two and three o'clock.

Eye Infirmary, Cork-street.—At the Annual General Meeting of the Governors of this Institution, held on Monday, March 27, His Grace the DUKE OF SOMERSET in the chair: the Surgeons reported, that since the last general meeting of the Governors of this Charity, held on the 26th of March 1814, there had been received 1541 patients, in addition to 944 then remaining on the books; 1445 of these had been relieved and discharged, and 46 deemed incurable. That amongst various other operations, 45 had been performed for the removal of the cataract, 42 of which had been successful.—That the total amount of poor persons received since the opening of the Charity on the 26th of March 1805, was 21,918; of whom 20,431 had been relieved and discharged, 493 deemed incurable, and 994 remained upon the books.—That within the same period, 733 operations for the removal of the cataract had been performed; 689 of which had terminated successfully, and 81 of these were on persons born blind.

HENRY ALEXANDER, Surgeon and Secretary.

Ancient MSS.—Among the MSS. discovered among the ruins of Herculaneum are two which bear some relation to the medical art. One is by Philomedes, on the Effects produced by Music upon the Human Constitution; the other, consisting of two volumes, treating upon Nature in General, is by Epicurus. Vide Report made to the Acad. of Sciences at Copenhagen by Baron Schubart.

VII.—NOTICES OF LECTURES.

The Summer Course of Lectures on the Theory and Practice of Physic, by Dr. Roget, and of Materia Medica and Medical Jurisprudence, by Dr. Harrison, will commence, as usual, in Windmill Street, on the first week in May. The Lectures on Chemistry will, in consequence of Dr. Davy's absence from town, be given during the summer by Dr. Granville.

Mr. Thomson will commence his usual Course of Lectures on Botany and Phytology early in May. In these lectures, besides the ordinary instructions in Systematic Botany, the organization and physiology of vegetables are fully elucidated. The illustrations, as far as it can be accomplished, are selected from the plants medicinally employed. For particulars, application may be made to Mr. Thomson, at his house, 92, Sloane Street, mornings and evenings.

VIII.—LITERARY WORKS IN OR PREPARING FOR THE PRESS.

Mr. Parkes has in the press a Series of Chemical Essays, to be published in four pocket volumes, and illustrated with engravings.

Dr. Kreysig in Dresden, is about to publish in two volumes, his work on Diseases of the Heart, in Latin, to be intitled, "De Cordis Humani Morbis, vitiisque rite cognoscendis et curandis."

A new edition, with many alterations, of the London Pharmacopœia, and a translation of it by Dr. Powell.

A METEOROLOGICAL JOURNAL,

From the 21st of March, to the 20th of April, 1815,

KEPT AT RICHMOND, YORKSHIRE,

230 Miles NW from London.

D.	Barometer. Max.		Min.		Therm. Max	Min.	Rain Gage.	Winds.	Weather.
21	29	08	28	93	62	42	03	SW...S...	1 S.. 3 R. 4 Mn.. & Sh.
22	29	03	28	93	53	39	17	SW....	1 S.. and Sh..
23	28	94	28	72	53	38	11	S..SW....	1 R.. 2 S.. and Sh.
24	28	83	28	70	51	35	15	W..SW...	1 S... 2 Sh.. and S..
25	29	20	29	12	49	32	02	WSW...	1 S... 3 Sh. and S..
26	29	11	28	82	51	41	03	SSW...	1 S.. and Sh.
27	29	03	28	80	56	37	56	SW....	1 S..&sh..3r....4m..&sh..
28	29	59	29	44	52	33	02	SW...	1 Cy.. 2 S.. & Sh. 4Stl...
29	29	47	29	34	54	34	05	SE..SW...	1 Cy... 3 S.. and R.
30	29	49	29	49	55	40		SW...	1 S...
31	29	49	29	40	61	41		SE..	1 S...
1	29	46	29	30	65	45		SW..SE..	1 S....
2	29	53	29	50	57	40	01	SW..	1 R. 2 S..
3	29	50	29	50	57	37		SW.W..	1 S..
4	29	68	29	50	58	35		SW...W..	1 S..
5	29	67	29	64	59	47		SW...SW....	1 S..
6	29	78	29	76	60	48		W...	1 S..
7	29	76	29	74	67	47		W.vble.	1 3 S... 2 Cy. 4 Starl..
8	29	70	29	66	57	40		ESE.	1 3 S. 2 4 Cy...
9	29	72	29	72	57	40		NE..	1 Cy.. 2 S...
10	29	68	29	65	55	42	02	N.	1 S.. 3 Cy.. 4 R.
11	29	67	29	67	62	47		SE.SW.	1 3 4 Cy... 2 S.
12	29	68	29	50	68	46		SW.SE.	1 S..
13	29	38	29	34	64	32	28	SW.NW..	1 S.. 3 R..
14	29	72	29	59	39	32	02	NW...	1 Sn. 2 S. & Sh of Snow.
15	29	79	29	79	50	34		WNW..	1 S...
16	29	82	29	82	56	34		E by N..	1 3 4 Cy.. 2 S..
17	29	98	29	98	57	33		Vble.	1 Cy.. 2 S.
18	29	98	29	88	55	32		NW..NE..	1 S..
19	29	74	29	62	60	36		WNW..	1 S..
20	29	37	29	04	59	37		NW..	1 3 S.. 2 Cy.. 4 Moons..

Observations on Diseases at Richmond.

The quantity of rain during the month of March was 2 inches 35-100. The change of temperature during this period has been considerable, and sometimes sudden. Catarrhal, Pulmonary, and Febrile Complaints have been very prevalent. The cases of Typhus have rather increased in number since last Report. The other diseases that have been under treatment were Anasarca, Colica, Epistaxis, Gastrodynia, Ophthalmia, and Phthisis Pulmonalis.

DISEASES.	DISTRICTS. 1 S.W.	2 S.	3 S.E.	4 E.	5 N.E.	6 N.	7 N.	8 W.	9 Surry sideW	10 Surry sideE.	11 Hamp Highg	No. of Cases.	Fatal.
Anasarca	4	.....	3	5	6	6	6	3	4	3	.....	40	4
Ascites	.....	.....	2	.....	4	.....	1	4	1	.....	.....	12	2
Asthma	13	4	5	4	15	11	18	6	3	5	4	88	3
Acne	3	1	3	.....	.....	.....	.....	1	.....	2	.....	10	
Apoplexia	1	1	2	2	3	.....	.....	2	.....	3	.....	14	6
Aphtha	.....	1	.....	3	7	2	4	9	4	2	.....	32	
Amenorrhœa	6	4	2	4	5	.....	4	1	3	1	2	32	
Asthenia	14	8	6	7	17	4	13	8	11	5	3	96	3
Abortio	2	.....	1	.....	2	1	2	6	1	1	4	20	
Bronchitis *acuta*	.....	.....	2	2	.....	.....	.....	4	.....	.....	.....	8	2
——— *chronica*	1	.....	.....	3	5	.....	.....	3	.....	1	.....	13	1
Cancer	.....	.....	.....	.....	1	.....	.....	2	.....	.....	.....	3	
Cephalæa	.....	1	.....	.....	.....	.....	.....	2	.....	.....	.....	3	
Chlorosis	2	6	5	2	1	.....	1	8	2	1	7	35	
Cholera	15	4	2	3	1	2	.....	1	4	3	2	37	
Chorea	.....	.....	.....	.....	3	.....	3	2	.....	.....	.....	8	
Cephalalgia	22	6	5	7	13	3	4	2	7	3	4	76	
Colica	2	.....	2	3	8	3	6	10	2	.....	3	39	
Catarrhus	27	18	18	21	24	8	49	33	14	7	13	232	
Convulsio	2	.....	1	.....	3	4	1	3	.....	5	2	21	1
Carditis	1	.....	1	1	.....	.....	2	.....	.....	1	.....	6	1
Cynanche *Tonsillaris*	13	3	5	6	8	2	5	13	6	3	8	72	
——— *maligna*	.....	2	.....	.....	.....	.....	3	1	.....	.....	.....	6	
——— *Trachealis*	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1	2	
——— *parotidea*	.....	.....	.....	2	.....	4	1	5	2	.....	.....	14	
Diabetes	.....	.....	.....	1	.....	.....	.....	2	.....	.....	.....	3	
Dysenteria	3	4	.....	1	.....	.....	2	.....	1	.....	.....	11	
Diarrhœa	6	7	8	8	12	9	13	13	8	4	7	95	
Dyspnœa	9	.....	.....	2	2	3	.....	6	.....	3	2	27	
Dyspepsia	28	17	19	20	19	10	21	22	13	11	19	199	
Dysuria	3	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	5	
Ecythyma	4	.....	1	.....	2	.....	.....	.....	1	.....	.....	8	
Erythema	1	1	.....	.....	1	.....	.....	.....	1	.....	.....	4	
Erysipelas	3	2	4	3	4	.....	9	4	2	3	4	38	
Enteritis	.....	.....	.....	.....	.....	3	.....	.....	.....	.....	.....	3	
Entrodynia	2	10	2	4	6	7	.....	.....	4	2	6	43	
Epilepsia	1	.....	2	2	4	.....	4	1	.....	.....	.....	14	
Epistaxis	1	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	2	
Febris *remittens*	12	5	6	7	18	15	4	10	7	5	2	91	
—— *intermittens*	.....	1	4	3	.....	11	3	7	2	2	1	34	
—— *puerpera*	.....	.....	.....	.....	.....	3	.....	.....	.....	2	.....	5	
—— *synocha*	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	2	
—— *synochus*	1	.....	.....	.....	3	.....	.....	.....	1	.....	.....	5	
Gastritis	.....	.....	.....	.....	.....	1	1	1	.....	.....	.....	3	
Gastrodynia	10	3	.....	5	6	4	9	5	3	4	3	62	
Gonorrhœa *pura*	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1	
Hæmatemesis	.....	.....	.....	2	.....	.....	1	1	.....	.....	.....	4	
Hæmoptoe	1	.....	1	2	2	3	2	.....	.....	.....	1	12	1
Hæmorrhois	3	2	2	4	7	2	.....	9	4	2	2	37	
Hepatitis	3	2	3	7	5	2	2	.....	2	4	.....	30	
Hysteria	3	3	2	5	7	.....	.....	3	3	5	3	39	
Hysteritis	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	2	
Hydrocephalus	.....	.....	.....	2	1	.....	1	1	.....	1	.....	6	4
Hydrothorax	.....	1	.....	.....	2	.....	.....	1	.....	.....	.....	4	1

DISEASES.	DISTRICTS. 1 S. W.	2 S.	3 S.E.	4 E.	5 N.E.	6 N.	7 N.W.	8 W.	9 Surry sideW	10 Surry sideE.	11 Hamp Highg	No. of Cases.	Fatal.
Herpes	10	3	.....	3	4	4	4	.....	3	2	2	35	
Hypochondriasis	.....	1	3	.....	1	.....	5	1	2	1	.....	14	
Icterus	2	.....	.....	1	1	2	1	6	1	2	.....	16	
Impetigo	.....	.....	.....	.....	5	.....	1	4	.....	.....	.....	10	
Ischuria	2	.....	1	.....	.....	1	1	1	.....	2	.....	8	
Leucorrhœa	5	2	.....	4	6	.....	3	4	3	3	4	34	
Lithiasis	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	1	
Lumbago	.....	1	.....	1	5	.....	.....	.....	2	.....	.....	9	
Lichen	1	.....	.....	.....	6	.....	.....	2	1	.....	.....	10	
Mania	1	.....	.....	.....	3	2	11	.....	.....	.....	.....	17	
Menorrhagia	.....	2	2	5	6	5	8	2	4	3	3	40	
Miliaria	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	1	
Morbi *Infantiles**	18	10	12	8	21	9	21	35	16	35	8	193	2
——— *Biliosi*	44	11	20	7	15	9	12	25	18	39	6	206	
Nephritis	.....	.....	.....	.....	1	3	1	3	.....	.....	.....	8	
Odontalgia	.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....	2	
Obstipatio	3	4	2	.....	3	11	6	1	2	.....	3	35	
Ophthalmia	18	5	4	5	9	1	15	14	5	6	7	89	
Paracusis	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1	
Paralysis	1	.....	2	.....	5	.....	4	1	2	.....	.....	15	1
Phthisis *Pulmonalis*	9	.....	1	3	6	3	9	4	1	3	.....	39	8
Pertussis	.....	10	3	.....	.....	3	5	9	.....	.....	3	33	2
Peritonitis	.....	.....	.....	.....	1	2	2	1	.....	.....	.....	6	
Phrenitis	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	2	
Pneumonia	1	10	4	5	12	11	12	6	4	8	5	78	4
Pleuritis	.....	2	.....	.....	1	4	2	.....	.....	.....	.....	9	
Pleurodyne	.....	.....	1	.....	2	1	.....	.....	.....	1	.....	5	
Podagra	4	.....	2	.....	7	.....	7	2	1	2	.....	25	
Porrigo *larvalis*	4	.....	.....	1	1	.....	.....	.....	.....	.....	.....	6	
——— *scutulata*	1	.....	.....	2	1	.....	3	.....	2	.....	.....	9	
——— *favosa*	2	.....	.....	.....	5	.....	1	.....	.....	.....	.....	8	
Psoriasis	1	5	.....	3	.....	1	2	.....	3	2	2	19	
Pemphigus	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1	
Pyrosis	2	4	.....	2	1	.....	1	.....	.....	1	.....	11	
Rheumatis. *acut.*	12	4	6	5	6	16	12	11	8	11	.....	91	
——— *chron.*	6	2	3	7	17	8	27	6	14	7	4	101	
Rubeola	19	1	2	1	2	1	10	19	.....	4	1	60	
Scabies	14	.....	4	7	10	18	58	9	.....	2	.....	122	
Scarlatina *simplex.*	1	2	.....	.....	2	10	4	4	.....	4	.....	27	
——— *anginosa*	.....	.....	.....	.....	3	1	4	.....	.....	3	1	12	1
Splenitis	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	1	
Scrofula	6	.....	3	4	6	5	3	1	4	2	3	37	
Tabes *Mesenterica*	.....	1	.....	.....	.....	.....	2	2	.....	.....	5	10	2
Tetanus	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	1	
Typhus	1	.....	.....	.....	3	2	2	1	.....	1	.....	10	4
Variola	.....	5	.....	.....	4	12	10	1	.....	3	1	36	1
Varicella	1	.....	.....	.....	.....	.....	.....	.....	.....	4	4	9	
Vermes	3	.....	.....	3	1	10	.....	7	2	6	4	37	
Vertigo	4	.....	5	6	10	1	7	6	6	5	5	55	
Urticaria	.....	.....	.....	.....	4	.....	3	3	2	3	2	17	
Total No. of Cases	419	202	200	238	428	285	479	412	223	159	176	3221	
Total of Deaths	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	55

* *Morbi Infantiles* is meant to comprise those Disorders principally arising from dentition or indigestion, and which may be too trivial to enter under any distinct head; *Morbi Biliosi*, such Complaints as are popularly termed *Bilious*, but cannot be accurately classed.

AN ABSTRACT from the REGISTER *of those* DISEASES *of* LONDON, *presumed to originate in, or be influenced by, the State of the* ATMOSPHERE, *with a* DIURNAL REFERENCE *to the* METEOROLOGICAL TABLE.

METEOROLOGICAL TABLE FOR LONDON,

From the 20th of MARCH, to the 19th of APRIL, 1815.

M	Therm.	Barom	Hygrom. Dry.	Hygrom. Damp.	Winds.	Atmos. Variation.	D.	Asthma.	Apoplexia.	Bronchitis.	Cholera.	Cephalalgia.	Colica.	Catarrhus.	Cynanche.	C. Trachealis.	Dysenteria.	Diarrhœa.	Dyspnœa.	Erysipelas.	Febres.	Hæmoptoe.	Morbi Biliosi.	Ophthalmia.	Paralysis.	Phthisis.	Pertussis.	Pneumonia.	Podagra.	Rheumatismus.	Rubeola.	Scarlatina.	Typhus.	Variola.	Varicella.	Vertigo.	Urticaria.
	51 56 48	30 29⁷	3		E.	Fog...Fog...F...C..	20		1					8	3			4			6		6	2		2	1	4		8		2		3		2	1
	51 56 48	29⁸	4		W..	C...F....R.F..	21	1	2			6		9		1		1	2	1	5	1	5	4	1	3		5	1	4		1	1		1	1	1
	47 51 51	29⁶	6		SW...	R.F....R..C.	22	4				8	1	6	5			4		2	7		11		1	3				10	3	1			2	2	
	50 52 44	29⁴	8		W...	F..R...F....	23	5	1	2	2	4	3	13	1			2	3	2	4		8	5		1	1	6	2	7	2					3	
	47 53 48	29⁵ ⁴	5		NW...	C...C..R..R.. in N	21	3						15	4			3		4	5		7	3		2		3	2	6	4				3		
○	44 49 41	29⁵ ⁶		6	W..	C...R.F..F....	25	2			2	5	2	10	3		2				1	1	10	1	2	1		2		9	1			1		3	
	39 45 48	29⁷	3		SW..	F..R..C....R..R..in N	26	6	2	3		7		5				3		3	3		4					1	3	1	4						2
	48 57 54	29⁵		10	SW...	R..R.R...R. in N	27	4			2	1	4	7	5			4		3	2		3	7		3	1	3	1	4		3				4	1
	51 57 51	29⁵ 30		15	SW...	R.C.F...F...C...	28	5	1	1	1	4	1	11	4		1	4	1				1	8	1	2	1	5	1	3	5	4	1	2	1	2	1
	50 63 52	30 29⁹	5		SE.	C..F....F....	29	2				3		6	5			7		1	1		6	2				4		2	1	5	4		1			
	51 55 50	30	6		S.	Fog..C.F...C..	30	1				1	2	9	3	2		8	1	2	5	2	9	1		1		7	2	2				2	5		
	57 69 59	29⁹	4		E.	F..F....Fog.F..	31	5	1	1	4	3	4	14	5	1	1	3			7	1	4	1		1		4	4	10		2		3	2		
◐	54 72 59	29⁷		12	E.S..	F..F....F...R. in N	1	3				1	1	8	2	1		1	2	1	8	1	3	2	1	1		3		12		1					1
	54 59 52	29⁸ ⁹		10	NW..	C..C..F...C..F....	2	2		1	2	5	1	6	5			4					9	1		1		2	1	9	1	4		1	2	1
	50 52 48	29⁹ 30		2	W.	C...R..F...	3	3	1		1	1	2	9	4		2	3	1	3	4		11	7		4	2		2	13	1		1	3		1	
	43 58 45	29⁹ 30¹	6		W..	F...F...F....	4	1				2	4	12	1		2				3		10	6	2	1	3	2	2	6			2		5		
	42 56 48	30² ⁵	12		NW.	F...F...F..	5	2			2			4	3	1		3	4	1	9	1	9	4	1	2		7		4	6	1		2			2
	45 65 49	30² ¹	25		W...	F....F....F..	6	2			1		1	4	5			4	2		4		8	3		1		8	1	8	1	1			2		
	52 66 54	30¹	29		E..	Fog..F....F....	7	3				3	1	2	2			3	1		5		6	4				5		7	4	2	2	4		1	1
	53 64 52	30	25		E..	Fog..F....F....	8				2	1	1	8	2		1	1	3	1	5	2	8	2		1	2	1		8	3	4		1	1	2		
◑	51 59 52	29⁹ 30	24		E.	C..R.F..	9	2	1		3	2	4	9	4		1	4			6		9	1		4	4		2	4	2			1	2		
	47 57 53	29⁹ 30		5	NE..	R..R...C..	10	4	1			3		7	5			6	2		8		10	7	1			1		4	1	3		5		1	3
	50 64 55	30		10	SW..	C....F...F...	11	1		2		5		4				2		2	4		12			2	1			6	4	3	1	3		4	
	52 65 55	30	5		E.	F..F....F...	12	4			1	1	1	9	3		1	4	2	4	3	1	8	1	1			2		8	1			1		3	
	50 59 45	29⁹ ⁷		6	W...	C..R....R..F..	13	3	2	3		2		6	6			2	1		3		7	2		3	1	3		3		1	1				
	42 44 38	29⁷ ⁹		7	NW.	C..Hail..F....	14	4						8	3			1		2	4	1	10			1		2	2	3	3	1		4		4	
	40 48 42	30¹ ²	6		NE..	C..C...F...	15	4		1	1	2	2	3	2			4	1		2		3	1	2	1	2	1		1	3	2	1	1		2	1
◐	38 50 40	30²	5		NW.	C..F...F..	16	5	1	2		1		9				6		4	4		6	2		2	3	3		5	1			2			
	40 48 43	30² ³	10		E.	F...F..F.../	17	2			1		2	4	4		1		2		3	2	7	1				4			4	2			1		
	40 52 42	30⁴ ³	16		W..	C..F..F....	18	1			2	1	1	2	3			3		3	2		2	3	1			3		2	3						
	40 52 46	30² ¹	20		NW.	F....F....F....	19	2	1				1	5	3			1		1	2		1			2	1	1			1	1				3	
						No. of Cases...		88	14	21	37	76	39	232	92	2	11	95	27	38	137	12	206	89	15	39	33	87	25	192	60	39	10	36	9	55	17
	Princes Street, Cavendish Square.					Fatal.....		3	6	3												1			1	8	2					1	4	1			

Total of Cases,...1785. Total of Deaths,...30.

Quantity of Rain from March 20, to April 19, one inch 40-100ths.

BILL OF MORTALITY *from March* 14, *to April* 18, 1815.

CHRISTENED.

	Mar. 21.	*Mar.* 28.	*Ap.* 4.	*Ap.* 11.	*Ap.* 18.
Males.....	209	156	259	290	172
Females....	184	161	251	272	174
	393	317	510	562	346

Total *(five weeks)*..... 2128.

BURIED.

	Mar. 21.	*Mar.* 28.	*Ap.* 4.	*Ap.* 11.	*Ap.* 18.
Males.....	178	137	175	187	172
Females.....	189	137	192	154	141
	367	274	367	341	313

Total *(five weeks)*..... 1662.

OF WHOM HAVE DIED,

Under 2 yrs.	91	70	81	80	96
Betw. 2 & 5...	32	23	33	36	33
5 & 10...	9	10	17	15	11
10 & 20...	11	17	14	10	12
20 & 30...	28	18	26	24	25
30 & 40...	33	22	40	30	29
40 & 50...	39	25	34	37	37
Betw. 50 & 60...	31	34	38	43	30
60 & 70...	39	22	31	27	20
70 & 80...	26	23	29	22	13
80 & 90...	24	8	17	18	8
90 & 100...	3	2	7	1	1
small Pox	12	5	6	9	5

Total... *(five weeks)*... 57.

THE weather has been extremely variable in this interval, fluctuating from the genial gales of Summer to the snows of Winter. On the 23rd of March, gusts of wind with stormy rain; on the 13th of April, a thunder storm of considerable violence passed over the metropolis with heavy rain; on the 14th, showers of hail intermixed, with snow; on the 15th, 16th, and 17th, unpleasantly cold.

The extraordinary and sudden changes of temperature which have taken place within these few weeks, have very much increased the virulence of disease; and although the temperature be much lowered, yet *Typhus* has shewn itself in several places in the metropolis, and even the more open situations in the western district. This disease has, of late years, very rarely occurred. In two of three of the cases noticed, its infectious origin could be clearly traced. In the other, its origin might be presumed, if not absolutely detected; it having occurred to a manufacturer, who, whilst travelling in search of employment, lodged every night in those miserable receptacles, where, every one paying a very few pence, may be supplied with a bed, which, perhaps, the night before was occupied by a victim to fever.

The case of *Hydrocephalus* reported last month, was that of the Reporter's own child, two years and nine months old, of a very delicate and weakly constitution, yet

was uncommonly acute in all his faculties. He had a very prominent forehead, and the beating of the artery at the fontanel was more evident than usual. He had been indisposed for several weeks, frequently complaining of his head, to which place he would often apply his hands, and say his head ached. About three weeks previous to his death, I was called to witness a large quantity of clear water discharged from his stomach, without any apparent cause or uneasiness; soon after which he was attacked with a very strong convulsion, but from which he soon recovered, and appeared tolerably well for several days. At length, however, he became generally uneasy, petulent, restless, feverish, and hot; his skin dry, and his pulse rapid; his appetite impaired, and his bowels confined. During these symptoms I frequently purged him with calomel and scammony, and gave him saline medicines with digitalis. Other symptoms, however, soon came on, namely, sickness, convulsions, raving, dilatation of the pupil, and strabismus, which but too strongly marked the fate of the poor infant. During this stage of the complaint, Drs. Cooke and Hooper saw him, who directed purging again with calomel and scammony, and to rub freely the Ung. Hydr. fort. on the thighs, until a ptyalism came on, but which did not take place. Blisters and leeches to the temples, and the head to be continually kept wet with spt. ætheris sulph. acet. distillat. and water. Under this treatment, however, there was no sensible good effect produced, and he at length became totally blind, paralysed, and convulsed, and ultimately sunk into a comatose state for three days, in which situation he died.—Having no doubt in my own mind that effusion on the brain was the cause of death, I (principally from the feelings of the mother) did not have any examination *post mortem.*

The case of *Croup* yielded to the following treatment, in so short a period, that it shows how manageable the disease is, when attacked early. The child is one year and a half old, and was attacked in the course of the day with slight cough and hoarseness; which, however, by ten o'clock the same evening amounted to decided croup, when I was sent for, and very plainly heard the croupy noise on going up the first flight of stairs, though the child was in the attics. I immediately gave a solution, of emetic tartar 4 grains, and 12 of ipecacuanha in two ounces of water; two tea-spoonfuls every ten minutes till it produced both vomiting and purging: but the whole was taken before it produced that effect. The symptoms, though relieved, yet not to be trusted, I ordered eight leeches to the throat, which in the course of two hours completely relieved the breathing, with every croupy symptom that was left. Twelve ounces of blood might, perhaps, have been lost; as the leeches were completely filled; and four napkins rolled round the throat were successively soaked in blood. The symptoms, however, somewhat returned in six hours; when I ordered two grains of calomel and one of antimonial powder every six hours; with one grain of ipecacuanha "horis intermediis;" which, with a blister to the throat, completely subdued the disease in forty-eight hours.

In two of the cases of *Rheumatism,* in which the wrists and knee-joints were affected, bandages were very firmly applied round the pained joints. The patients experienced almost instantaneous relief to a certain extent; but in two or three days when the parts had become accustomed to the pressure, the beneficial effect ceased. This practice however, which was brought forward lately by Dr. Balfour of Edinburgh, promises to prove a useful adjunct to the other means for the removal of this painful disease.

One of the cases of *Chorea* was a recurrence of the disease in a young woman, who had several times before suffered attacks of it. After clearing the bowels with Hydrarg. Submurias and an aloetic purge, the symp-

toms rapidly disappeared under the use of Argenti Nitratis gr. ss. in aqua menth. pip. f 3xij. and gradually increasing it to one grain.

A case of *Ophthalmia*, which had succeeded Measles, was treated by giving antimonial wine in doses sufficient to produce vomiting three or four times a day; and keeping the eye cool with the common saturnine collyrium. By this means the inflammation, which had resisted the use of leeches, blisters, purgatives, and other antiphlogistic means, was soon subdued.

Two of the cases of *Gout* were very quickly brought to a successful issue, by freely purging during the day, and the exhibition of an opiate combined with a sudorific at bed time; the abatement of the pain keeping pace with the improved aspect of the alvine dejections. In two instances, in persons often affected with this disease, great relief was experienced, after the exhibition of a purgative, from continuing the feet for two hours at a time in tepid water, at the temperature of 63°; and upon going to bed, laying a poultice of bread and water at the same temperature over the parts in pain, and renewing it when it became colder. Under this treatment the attacks were also rendered much shorter than usual.

In one of the cases of gout reported in our last Number, in which the stomach and intestines had been powerfully affected, after the abatement of its violence, a considerable quantity of coagulated mucus, in lengths resembling tape worm, were passed by the patient. When cleaned and put into distilled water, it completely dissolved in four days. The patient had taken large doses of opium and ether during the violence of the paroxysms of pain, which had occasioned great costiveness, on the removal of which, the mucus was passed. She had had frequent faintings.

Monthly Prices of Substances *employed in* Pharmacy.

		S.	D.
Acaciæ Gummi elect.	lb.	3	6
Acidum Citricum		34	0
—— Benzoicum	unc.	6	6
—— Sulphuricum	P. lb.	0	8
—— Muriaticum		2	0
—— Nitricum		4	0
—— Aceticum	cong.	4	6
Alcohol	M. lb.	4	6
Æther sulphuricus		10	6
—— rectificatus		12	0
Ærugo	lb.	8	0
Aloes spicatæ extractum		6	9
— vulgaris extractum		5	6
Althææ Radix		1	3
Alumen		0	6
Ammoniæ Murias		2	6
—— Carbonas		4	0
Amygdala dulcis		5	0
Ammoniacum (Gutt.)		14	0
—— (Lump.)		4	0
Anthemidis Flores		2	3
Antimonii oxydum		6	0
—— sulphuretum		1	0
Antimonium Tartarizatum		6	6
Arsenici Oxydum		1	0
Assafœtidæ Gummi-resina	lb.	7	0
Aurantii Cortex		4	6
Argenti Nitras	unc.	6	9

		S.	D.
Balsamum Peruvianum	lb.	30	0
—— Tolutanum		22	0
Benzoinum elect.		14	0
Calamina præparata		0	6
Calumbæ Radix		3	6
Cambogia		10	6
Camphora		8	6
Canellæ Cortex		7	0
Cardamomi Semina opt.	lb.	2	0
Cascarillæ Cortex		3	6
Castoreum	unc.	5	0
Catechu Extractum	lb.	2	6
Cetaceum		2	9
Cera alba		4	0
—— flava		5	6
Cinchonæ cordifoliæ Cortex (yellow)		6	6
—— lancifoliæ Cortex (quilled)		10	6
—— oblongifoliæ Cortex (red)		16	0
Cinnamomi Cortex		20	0
Coccus (Coccinella)	unc.	3	6
Colocynthidis Pulpa	lb.	9	0
Copaiba		6	6
Colchici Radix		3	6
Croci stigmata	unc.	5	0
Cupri sulphas	lb.	1	0
Cuprum ammoniatum		4	0
Cusparíæ Cortex		4	0
Confectio aromatica		12	0

		S.	D.
Confectio Aurantii	- -	3	6
—— Opii	- - -	5	0
—— Rosæ Caninæ	- -	2	0
—— Rosæ Gallicæ	- -	2	3
—— Sennæ	- - -	1	8
Emplastrum Lyttæ	- - -	7	6
—— Hydrargyri	- -	4	0
Extractum Cinchonæ	- - unc.	2	6
—— Cinchonæ resinosum	-	5	0
—— Colocynthidis	- -	3	6
—— Colocynthidis comp.	-	1	6
—— Conii	- - -	0	8
—— Elaterii	- - -	24	0
—— Gentianæ	- - -	0	6
—— Glycyrrhizæ	- lb.	4	6
—— Hæmatoxyli	- unc.	0	8
—— Humuli	- - -	0	6
—— Hyosciami	- unc.	1	0
—— Jalapæ	- 2*s.* 0*d.* Res.	3	6
—— Opii	- - -	3	6
—— Papaveris	- - -	1	0
—— Rhæi	- - -	2	6
—— Sarsaparillæ	-	1	4
—— Taraxaci	- - -	0	8
Ferri carbonas	- - - lb.	1	0
— sulphas	- - -	1	3
Ferrum ammoniatum	- - -	5	0
—— tartarizatum	- -	5	0
Galbani Gummi-resina.	- -	10	0
Gentianæ Radix	- - - -	1	3
Guaiacum	- - - - -	8	6
Hydrargyrus purificatus	- -	6	6
—— præcipitatus albus	- -	8	0
—— cum creta	- - -	6	0
Hydrargyri Oxymurias	- unc.	0	9
—— Submurias	- - -	0	9
—— Nitrico-Oxydum	- -	0	9
—— Oxydum Cinereum	-	1	4
—— Oxydum rubrum	- -	6	0
—— Sulphuretum rubrum	-	0	8
Hellebori nigri Radix	- lb.	2	6
Ipecacuanhæ Radix	- - -	18	0
—— Pulvis	- - -	19	0
Jalapæ Radix	- - - -	6	6
—— Pulvis	- - - -	7	6
Kino	- - - - - -	9	0
Liquor Plumbi Acetatis	- M. lb.	1	8
— Ammoniæ	- - - -	2	6
— Potassæ	- - - -	1	0
Linimentum Camphoræ comp.	-	6	6
Lichen Islandicus	- lb.	1	4
Lyttæ	- - - - - -	14	0
Magnesia	- - - - -	9	0
Magnesiæ Carbonas	- -	3	6
—— Sulphas, opt.	- - -	1	6
Manna optima	- - -	8	0
— communis	- -	5	0
Moschus pod, (30*s.*)	in gr. unc.	40	0
Mastiche	- - - - lb.	6	6
Myristicæ Nuclei	- - -	22	0
Myrrha elect.	- - -	8	0
Olibanum	- - - -	4	6
Opoponax	- - - -	26	0
Opium (Turkey)	- - -	36	0
Opium (East India)	- - -	37	0
Oleum Amygdalæ	- - lb.	4	0
— Anisi	- - - unc.	2	9
— Anthemidis	- - -	6	6
— Cassiæ	- - - -	8	0
— Caryophilli	- - -	5	6
— Cajuputi	- - - -	7	0
— Carui	- - - - -	1	9
— Juniperi Ang.	- - -	3	0
— Lavandulæ	- - -	4	6
— Lini	- - - cong.	6	0
— Menthæ piperitæ	- unc.	5	0
— Menthæ viridis Ang.	- -	4	6
— Olivæ	- - cong.	24	0
— Olivæ secundum	- 14*s.* to	18	0

		S.	D.
Oleum Pimentæ	- - unc.	6	0
— Ricini optim.	- (per bottle)	9	6
— Rosmarini	- - unc.	0	9
— Succini 2*s.* 4*d.*	—— rect.	4	0
— Sulphuratum	- P. lb.	1	6
— Terebinthinæ	- - -	1	3
— —— rectificatum	- -	1	9
Papaveris Capsulæ	- (per 100)	5	0
Plumbi Carbonas	- - lb.	0	8
— Superacetas	- - -	2	6
— Oxydum semi-vitreum	-	0	8
Potassa Fusa	- - - unc.	0	9
— cum Calce	- - -	0	6
Potassæ Nitras	- - - lb.	1	4
— Acetas	- - - -	9	6
— Carbonas	- - -	1	6
— Supercarbonas	- -	4	6
— Sulphas	-	1	4
— Sulphuretum	- -	2	6
— Supersulphas	-	0	6
— Tartras	- - -	3	6
— Supertartras	- - -	1	6
Pilula Hydrargyri	- - unc.	0	9
Pulvis Antimonialis	- -	0	8
— Contrayervæ comp.	- -	0	6
— Tragacanthæ comp.	-	0	4
Resina Flava	- - lb.	0	5
Rhæi Radix (Russia)	- - -	40	0
—— (East India)	- -	16	0
Rosæ petal.	- - - -	9	0
Sapo (Spanish)	- - -	2	9
Sarsaparillæ Radix	- -	7	0
Scammoneæ Gummi-Resina	- unc.	5	0
Scillæ Radix siccat	- - lb.	5	6
Senegæ Radix	- - -	5	0
Sennæ Folia	- - -	7	0
Serpentariæ Radix	- -	34	0
Simaroubæ Cortex	- -	4	6
Sodæ Boras	- -	4	0
— Sulphas	- - -	0	10
— Carbonas	- - -	8	0
— Subcarbonas	- -	1	8
— —— exsiccata	- -	5	0
Soda tartarizata	- -	3	0
Spongia usta	- - - -	20	0
Spiritus Ammoniæ	- M. lb.	4	0
— —— aromaticus	-	4	0
— —— fœtidus	- -	4	0
— —— succinatus	-	5	0
— Cinnamomi	- - -	3	0
— Lavendulæ	- - -	5	6
— Myristicæ	- - -	3	6
— Pimentæ	- - -	3	6
— Rosmarini	- - -	4	0
— Ætheris Aromaticus	- -	7	0
— —— Compositus	- -	6	6
— —— Nitrici	-	4	0
— —— Sulphurici	- -	6	6
— Vini rectificatus	- cong.	28	0
Syrupus Papaveris	- - lb.	2	0
Sulphur	- - - -	0	8
— Sublimatum	- -	9	10
— Lotum	- - -	1	2
— Præcipitatum	- -	1	2
Tamarindus opt.	- - -	2	6
Terebinthina Vulgaris	- -	0	10
—— Canadensis	-	7	6
—— Chia	-	9	0
Tinct. Ferri muriatis	-	5	6
Tragacantha Gummi	- -	7	0
Valerianæ Radix	- - -	1	6
Veratri Radix	- - -	1	6
Unguentum Hydrargyri-fortius		5	6
—— —— Nitrati		2	8
—— —— Nitrico-oxy		3	0
Uvæ Ursi Folia	- - -	3	0
Zinci Oxydum	- - -	6	0
— Sulphas purif.	- - -	2	6
Zingiberis Radix opt.	- - -	3	6

Prices of New Phials per Gross.——8 oz. 70*s* —6 oz. 58*s.*—4 oz. 47*s.*—3 oz. 43*s.*—2 oz. and 1½ oz. 36*s.*—1 oz. 30*s.*—half oz. 24*s.*——The London Glassmen allow 10 per Cent, ready money.——The Manufacturers in the Country, where all Phials are made, allow 27½ discount, at three months credit, (carriage free,) to London.

Prices of second hand Phials, cleaned, and sorted.——8 oz. 46*s.*—6 oz. 44*s.*—4 oz. 33*s.*—3 oz. 30*s.*—2 oz. and all below this size, 23*s.*—Three months credit.

Best Leeches, 8*s.* Bourdeaux Leeches, 4*s.* per dozen at Covent Garden Market.

MONTHLY CATALOGUE OF BOOKS.

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Observations upon the Bulam Fever, which has of late years prevailed in the West Indies, on the Coast of America, at Gibraltar, Cadiz, and other Parts of Spain: with a Collection of Facts proving it to be a Contagious Disease. By W. Pym, M.D. Deputy Inspector of Hospitals, late Superintendant of Quarantine and President of the Board of Health at Malta. 8vo. Callow.

INDEX INDICATORIUS.

We have to acknowledge Communications from Dr. Reid Clanney, J. R. *&c. &c.*

Since the account of our experiments with Oxalic Acid was printed off, it had been suggested by a learned Professor of Chemistry, that the salts mentioned in Mr. Robarts' Case might be Tartaric Acid, which rapidly kills animals. The specimen sent from Mr. Robarts certainly was Oxalic Acid; and we have to add, that that which we employed in our experiments consisted of some made by Mr. Thomson from sugar with nitric acid, and some purchased from Mr. Accum.

In answer to a Correspondent, who requested to know the composition of the Cerotti de Napoli, *we have to inform him, that it is corrosive sublimate and lard rubbed together. It is an invention of Dr. Cirillo, of Naples; and is applied to the soles of the feet in syphilis.*

This Publication, by application to the Clerks of the General Post Office, or if previously ordered of the Post Masters, will be sent to any of the British Colonies or Foreign Countries, upon the same terms as other Periodical Works.

Communications intended for insertion in the subsequent Number, should reach us before the 12th of the month. They are respectfully solicited, and should be addressed (free of expence) to Mr. Burrows, *Bloomsbury Square: by whom Books for the Review Department, Articles of Intelligence, &c. &c. will also be received.*

THE

LONDON MEDICAL REPOSITORY.

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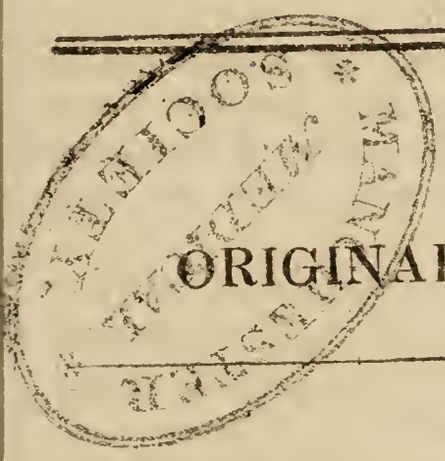

PART I.

ORIGINAL COMMUNICATIONS.

I.

An Account of two Cases of Death from eating Mussels; with some General Observations on Fish-Poison. By George Man Burrows, one of the Editors.

Having heard a very vague and unsatisfactory account of the death of two youths at Gravesend, in Kent, from eating mussels, I applied to Mr. Rogers, a Surgeon of that place, who I understood had attended them in their illness, for more accurate information of this melancholy event. From his obliging communication, chiefly, I have collected the following history.

Mr. Rogers says: "I was called on Monday, July 4th, 1814, at 7 P. M. to visit Master Pearson, aged fourteen years. I found his countenance of an ashy paleness; the pupils extremely dilated; respiration difficult; insatiable thirst; nausea; tormina; coldness of the extremities; the pulse quick, low, and tremulous, accompanied with subsultus: in short, he appeared to be *in articulo mortis;* and I informed his friends of his immediate danger.

"I learnt that his brother, aged nine years, had been afflicted with nearly the same symptoms; that death had ensued; and that he expired about three hours before I arrived. Combining this alarming circumstance with the present state of my patient, I conceived that they were the victims of one and the same cause; and that they were poisoned by something they had eaten.

" I proceeded to evacuate the stomach and bowels; but the vital spark was too nearly extinct: he died in a few hours.

" The death of these two youths was so extraordinary, and the cause so perfectly obscure (for the family could in no manner suppose they had eaten improper food), that I pressed most forcibly for permission to open and examine the bodies. But the feelings of the unhappy mother, in the first ebullition of grief, opposed my wishes; and their bodies, soon after death, became livid, and too putrescent to put into execution my wishes, even if consent had been obtained.

" Being denied this mode of satisfying my suspicions, I availed myself with the more care of the only resource; and was very minute in inquiries of the progress of this fatal attack, as a clue to direct me to the real cause of their death.

" It appeared, that both children were unwell on Saturday afternoon, (July the 2d,) and were very sick. The youngest complained of head-ache, and also puked up a great quantity of blackish matter; as did the eldest the same evening.

" On Sunday the 3d, they were still very sick, and frequently vomited a dark-green fluid; an eruption, like the nettle-rash, covered the skin, and was attended with intolerable itching. Great difficulty of breathing, and tormina, with intense thirst, and swelling of the abdomen and face, followed; the extremities gradually became cold and quite benumbed. The youngest was delirious on Sunday; then comatose, with frequent convulsive contortions of the whole body, for some hours before his death; the elder was sensible to the last, and more tranquil. There had scarcely been any alvine dejection since the commencement of their illness.

" The train of symptoms thus described may not be quite correct, or in the order of occurrence; but the account convinced me that some deleterious aliment had been taken. The similarity of symptoms to those I had seen before, arising from eating of shell-fish, induced me to take some trouble to ascertain whether these boys had been in any situation where they could have met with any of the various kinds easy to be procured in this place.

" At length I discovered, that on Friday, about noon, the 1st of July, the two Master Pearsons, in company with other boys, had been playing in the basin of the canal. Therein laid a fishing smack for sale; her bottom very foul, with many mussels adhering. From the water in the basin having a few days previously much subsided, the vessel had heeled; that is, fallen on one side; by which position the opposite side was raised beyond the reach of the water: consequently the mussels had been some time out of their element, and were dead and tainted.

Of this, the boys, natives of the place, being aware, they did not eat of them; but to the two Master Pearsons, who had recently with their family arrived from Oxfordshire, they were a novelty; and being told that they were frequently eaten, each picked about a dozen of the smallest, which are *supposed* to be the spawn, from off the vessel, and ate them.

"Of this they said nothing to their mother. She observed they ate little that day at dinner; and that little was of gooseberry pudding; they took besides a few shrimps in the course of the afternoon. But neither of them appeared ill, until the following day.

"Nothing had been given with the view of relieving, till I visited the elder; and this was just sixty-seven hours from the time of their unhappily eating these mussels; to which I decidedly attribute this melancholy catastrophe.

"The mother had no suspicion of the cause of their illness; and from the gradual accession of the symptoms, she was less alarmed. She remembers that one of her sons asked, if she liked mussels: but from her ignorance of such fish, or of their alleged poisonous qualities, the inquiry did not excite her suspicions.

"I have seen persons affected with the incipient symptoms exhibited by these children, from eating stale mackarel, and much more frequently from mussels; but they were always quickly relieved by free vomiting and purging: and I never before knew nor had heard of any one dying from the effects of fish-poison of any kind."

The above interesting but melancholy cases establish two points that have been much questioned; viz. that shell-fish are in this country poisonous under certain circumstances; and that the effect is sometimes mortal.

To some minds the danger of an evil is never imminent till it approaches, and threatens their own safety: but none, surely, perusing these cases, can be sceptical enough to deny, that there is a peculiar property or virus in fish which may occasionally prove highly dangerous.

So many naturalists and writers have concurred in the existence of fish-poison, that it might have been supposed no modern author would have ventured a contrary opinion. Yet a very judicious physician seems to doubt "if there be such a thing as shell-fish poison;" and is disposed to imagine*, the effects attributed to it depend more on the state of the stomach of those who are affected by it, or on a peculiar idiosyncrasy of constitution. But, although it be probable that fish is

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* Vide Dr. Stone *on the Diseases of the Stomach*, p. 80. 1809.

more obnoxious to the stomach of one person than another, yet numerous facts controvert the opinion of such effects having always a constitutional origin: for a considerable number of persons have been similarly affected from eating of the same fish, though in different degrees of severity. The effect will of course vary according to the strength of the digestive organs, the quantity of the poison, and the mass and quality, perhaps, of other ingesta taken at the same meal.

There are, who, whenever they eat of particular kinds of food, are disordered, and always exhibit the same symptoms. This I would pronounce idiosyncrasy of habit:—but when several are simultaneously affected by the same food, the cause must be with the food, and not the constitution. However, the authorities are so respectable and numerous, that the fact of a specific poison existing in fish is indisputable.

Of all that I have read of fish-poison, Dr. Chisholm's is the most elaborate dissertation*; and he has, with his usual industry, brought together, and cited a prodigious number of authorities, biblical and classical, foreign and domestic, to illustrate this curious subject; and has displayed a great store of learning, in support of certain hypotheses. But, after all, I fear the same obscurity prevails; and that his experience and his theories are of little avail.

Dr. Chisholm, not very philosophically, observes: "In vain would ingenuity be exerted in the investigation; fruitless would be the research for its solution:"—a precept, that, if generally applied, would extinguish the pursuits of science; effectually check the progression of knowledge, and the improvement of the condition of mankind—the proper aim and object of all human studies. It is a precept the more singular, because made by the learned Doctor; the whole tenor of whose life and actions have been the very converse. Indeed, the paper containing this remarkable passage bears testimony that it was unguardedly advanced.

It may perhaps seem presumptuous in any one, who has never possessed personal opportunities of observation, to offer even an opinion; and still more so to attempt to elucidate a subject so abstruse, by the mere collation of such facts and remarks as are already disclosed, and bear upon the subject. Consequently it is with just deference that I engage in an inquiry so difficult, with such scanty materials: yet, however diffident, I am encouraged to hope that my remarks may be serviceable, were they only to attract a stronger degree of attention to the subject; and although they tend to no practical result.

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* Vide *Edinburgh Medical and Surgical Journal*, vol. iv. p. 393.

To a maritime nation, undertaking long voyages in unknown seas, fish must be an important article of food. However desirable, sailors nevertheless are frequently denied this enjoyment, from the knowledge of a poisonous quality existing in some, and the dread of it in other fish. That no complete investigation, therefore, of the nature of fish-poison has been entered upon, is a real reproach to science and humanity; and a just stigma on British polity: for although the operations of an extended warfare or the pursuits of commerce have carried our fleets round the world; and the preservation of the health of our navigators must consequently be an object of primary importance; yet, no naturalist, or chemist, has been appointed by authority, or been moved by a love of research, to explore this mystery. In the instructions given to the scientific men who accompanied Peyrouse, their notice was particularly pointed to it. But the fatality attending that celebrated voyager, prevented the completion of this, as well as of various other parts of his commission.

Their very element is an impediment to a correct knowledge of the natural history of fish. It is impossible to become acquainted with their *habitats*, or with the diseases to which, no doubt, they are subject; or with those remarkable physical changes of constitution that we know many undergo; and to which probably all are liable, as well as other animals.

But although there be obstacles to this inquiry being pursued, in the way and with the success that other departments of natural history are studied; yet by a judicious arrangement, and application of every observation resulting from experience; and by reasoning analogically, the occult property of fish-poison may possibly be ultimately discovered. Fully to accomplish so desirable an object, must depend on a series of experiments on the animals that contain and impart it, conducted in such situations as are known to be most favourable to its production.

Many fish, such as salmon, herrings, eels, mackarel, many of the testaceous and most of the crustaceous fish of this country, have occasioned symptoms similar to those from the poison of tropical fish; but in a degree so mild as never before to have proved fatal; or at least, if such have been the effect, it is so rare that the cases have escaped my research.

The noxious effects of mussels (*Mytilus Edulis* of Linn.) have been frequently remarked by writers; and even to a degree to occasion death*. Capt. Vancouver relates, that several of his men were ill from eating some they collected, when ex-

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* Vide Behren's *Diss. de Affectionibus a comestis Mytilis.*

ploring the coast of America, in the North Pacific Ocean. Three were more affected than the others; and one of them died*.

The natural history of mussels was an object of interesting inquiry to *Reaumur;* but neither he nor the many learned physicians abroad†, who have noticed their poisonous qualities, have elucidated the cause of this peculiar property.

M. De Beunie, a physician at Antwerp, and *M. Du Rondeau*‡, have written two very excellent papers on the subject; and the former has attempted to assign an origin to the poison; but his theory is too fanciful to bear the test of examination. He ascribes this quality in the mussel to the presence of a small sea-insect, a species of *stella marina;* because it sometimes lodges itself in the mussel; and because the spawn of that insect is so caustic, that when the skin is rubbed with it, an itching and swelling follows. But this, decidedly, is not the cause; for whether it be from the poison of mussels, or of other fish, the effects are strikingly similar, though perhaps in different degrees of violence.

If any systematic inquiry be ever instituted, it is not in this hemisphere the subjects of experiment must be sought. for although the effects described are occasionally met with in the temperate regions, yet, I conceive they are then generally accidental; arising either from that idioscyncrasy which makes the habit also obnoxious to various kinds of fruit, bitters, &c. as well as to some sorts of fish, or to some peculiar state of the fish, that is not innate, but adventitious.

It is chiefly within the tropics, where Nature is so redundant in her operations and productions; where every thing

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* The poison, in these cases, appears to have been particularly active. At 9 P.M. they breakfasted on these mussels, roasted. In an hour they complained of numbness of the face and extremities, sickness, and giddiness. No relief being at hand, the officer commanding the boat-party desired the crew, of which the invalids were a part, to row quick to promote perspiration, and thus dissipate the poison. In three hours they reached land; upon which, one immediately fell down. Some water was heated; but he could not swallow it: and he expired in half an hour, perfectly tranquil, as if in a deep sleep. His lips had turned very black, and his extremities were much swollen. The other two men, by drinking plentifully of warm water, and exciting vomiting, escaped with their lives; but were ill for some days.—Vide *Vancouver's Voyage of Discovery*, vol. ii. p. 286, 287.

† Vide Moehring *de Mytilorum Veneno. ægrot.* 3. *in Haller's Disput.* tom. iii. p. 191.—Dr. Wickmann of Hanover, and Professor Kock, have likewise published some excellent remarks on the effects of mussels.

‡ Vide *Memoires de l'Acadamie Imperiale et Royale des Sciences et Belles Lettres de Bruxelles*, tom. i. and ii.

that is useful or baneful, whether animal or vegetable, is in excess; and where all the poisons acquire an activity, as if from an higher degree of concentration; that the deleterious qualities of fish are found to be more general, and most virulent: yet it should be noticed, that fish highly poisonous are found near Japan—a part far to the northward of the tropic of Cancer.

The fish to be dreaded in the Caribbean Seas appear to be multifarious*: but, of all, the poison of the yellow-bill'd sprat *(Clupea thryssa)* is the most active and dangerous. Indeed, it has rarely occurred that immediate death has ensued between the tropics from the virus of any other fish; although the conse-

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* It may prove useful to enumerate some of the poisonous fish, with their vulgar and systematic names; agreeably to such information as I have been able to collect. According to the Linnæan system they may be thus arranged.

AMPHIBIA.

NANTES.

Old Wife.....BALISTES *monoceros.*
Smooth Bottle-Fish..OSTRACION *globellum.*
Tunny.....TETRODON *sceleratus* } of Forster.
Blower or Blazer.....TETRODON *ocellatus* }

PISCES.

APODES.

Conger Eel.....MURÆNÆ *major subolivacea.*

THORACICI.

Dolphin.....CORYPHÆNA *cæruleo varie splendens, cauda bifurca.*
Porgee.....SPARUS *Chrysops* and S. *Pagrus* of Forster.
Gray Snapper.....CORACINUS *fuscus major.*
Hyne.....CORACINUS *minor.*
Barracuda.....PERCA *major* subargentea maculata, *pinnis migrantibus* of Browne—*esox* BARRACUDA of Sloane—BECUNE of the French.
Rock Fish.....PERCA *venenata,* P. *Marina* of Browne.
Grooper.....PERCA *venenosa* of Catesby, or *trigla subfusca nebulata* of Browne.
King-Fish.....SCOMBER *maximus, pinnulis utrinque novem, tuberculo rigido acuminato utrinque ad caudam*—TASSARD of the French—*Xiphias* of Browne.
Bonetta.....SCOMBER *thynnus.*
Cavalloe, Horse-eye and Green-backed. } SCOMBER *macula nigra ad basin utriusque branchiostegæ et in utraque pinna pectorali.*

ABDOMINALES

Spanish Mackarel.....SCOMBER *cæruleo argenteus nudus* of Browne.
Blue Parrott Fish.....MORMYRA of Browne.
Yellow-bill'd Sprat...CLUPEA *thryssa,* Faunula Sinensis.

INSECTA.

APTERA.

Sea Lobster.....CANCER *astacus* of Browne.
Land Crab.....CANCER *ruricolus*
Mussel.....MYTILUS *edulis.*

quences of eating others have been so pernicious and durable, that they have yielded to nothing but a change to a colder climate.

Various are the conjectures on the nature of this poison; and whether it be confined to particular organs, or parts, or the whole fish be infected. Some of these speculations are too loose to merit serious attention; yet they may be stated: others that are supported by respectable testimony or arguments, demand consideration. Every thing, indeed, on the subject, at present, is but conjecture; and while the evidence rests on hypothesis, tradition, or the oral testimony of the prejudiced and ignorant only, the truth must be long before it be elicited.

All the opinions advanced, may be arranged under seven heads; into which I will divide them, for greater perspicuity and facility of discussion.

Does the poison of fish exist—1. *In the skin?*—2. *In the stomach and intestinal canal?*—3. *In the liver or gall bladder?*—4. *In the entire substance of the fish?*—5. *In the food of fishes?*—6. *Is it a morbid change in the system of the fish?*—7. *Is it a poison*, sui generis?

1. *In the skin?*—The skin, it is well known, often partakes of the characteristic flavour of animals, and is usually more difficult of digestion than other parts. Hence it frequently disagrees, when the muscular or fat parts sit perfectly easy on the stomach; and hence, solely, when ill effects have succeeded the eating of fish, it has been attributed to the skin. It most likely participates in the other qualities of fish; but I deny that the poison ever resides in that membrane alone: there are no facts to support such a position*.

2. *In the stomach and intestinal canal?*—Experience has proved that the poison of fish is particularly active in those parts which are commonly called the offals; in which term are included the stomach, intestines, gall-bladder, &c. Numerous instances are recorded of dogs, cats, hogs, and birds, dying or being made extremely ill from eating these parts. It is said, also, that such have been the effects on brute ani-

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* Two cases of *Urticaria* were reported, last December, to have been consequent on eating the *skin* of red herrings.—Vide *Medical Repository*, vol. iii. p. 83. But upon making further inquiries, I learnt that a tradesman's wife and the apprentice had been taken suddenly exceedingly ill, after having eaten, not of the *skin* only, as reported, but of the *whole* of the fish.

There are two circumstances worthy of noting in this incident: 1. That as two persons, not related, ate of the red-herring, its effects were not imputable to any family idiosyncrasy of constitution; but to an action of a specific nature. 2. That the process in curing herrings is not an antidote to the poison, when it exists in the system of the fish.

mals; while persons, who have partaken of the fish, to which these offals belonged, remained uninjured. Dr. Thomas*, and others, relate, that even the yellow-bill'd sprat is eaten with impunity, if it be first carefully gutted. But this admits of doubt; for I fear all these accounts rest on oral evidence, and are, therefore, too vague to be depended on. We must also receive with caution all conclusions drawn from comparative effects of any substances on man and on animals:—an error into which many physiologists run, in deductions from their experiments. Perhaps there are no two animals upon whom the same substances would act similarly. It is very possible, that the same quantity of fish-poison that kills brutes, would merely disorder, or even not affect man: for it is fully proved, that it is always much more dangerous to the one than to the other.

From the effects of the offals of deleterious fish upon animals, it has, I apprehend, been inferred, that the poison was in the stomach and intestines; and, therefore, has been derived from their food; and this impression is so general, that it deserves particular notice. But the elucidation of this part of the subject is so interwoven with theories to be examined hereafter, that its consideration must be reserved for another section.

3. *In the liver or gall-bladder?*—The seat of the poison has been said to be exclusively in one or both of these viscera. But this assertion also rests entirely on supposition. It is not probable that these viscera should secrete a specific virus, without contaminating the animal of which it forms an integral part. I do not mean to advance, that a specific poison may not be generated by some natural process, and confined to a particular part of an animal. The venom of serpents is secreted and separated from the other fluids, and lodged at the base of their fangs; bees and venomous insects secrete, and eject through the sting, a poisonous fluid, from a particular reservoir; and in many animals, for various purposes, secretions peculiar to each are formed, and deposited in different parts of their bodies. But the functions of the liver are too prominent and important in the animal economy, to conclude, that, in a healthy state, it performs any offices, or secretes any matter in one fish dissimilar to another. Indeed there are direct facts to disprove that the poison is confined to the liver or gall-bladder.

Captain Cook, and the Messrs. Forsters, were poisoned by eating a piece of the liver only of a species of *tetrodon*, which was attended with some singular symptoms: yet they who

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* Vide *Memoirs of the London Medical Society*, vol. v.

ate of its substance were likewise poisoned*. *Sauvages* has remarked on the poisonous qualities of the liver of fish; but he does not say that the substance of the fish to which such liver belonged was not also noxious.

Mr. Quarrier, aware of the alleged poisonous properties of the gall-bladder, ordered it to be carefully removed from an albicore immediately it was caught; but nevertheless the fish proved highly deleterious†. In short, I can find no authority to suppose that the liver or gall-bladder alone contains any poisonous quality; but believe that when one part of a fish is poisonous, the whole is equally so.

4. *In the entire substance of fish?*—That a poisonous quality frequently pervades the substance of fish, is indisputable; and it would be a work of supererogation to enumerate all the instances of it on record. The sceptic may consult Dr. Chisholm's Dissertation, before referred to, who has certainly taken great pains to collect authorities; and also some few others that I shall quote in the course of this paper. The personal experience, or observation, of those who have been in the West Indies, will also furnish abundant testimony of the fact.

5. *In the food of fishes?*—Because the poison of fish has been found peculiarly active in the first passages of fish, it is strongly insisted on that it must proceed from the food. But this idea is entirely conjectural. Yet as most writers who have noticed the subject, and common opinion, concur in attributing it to this cause, it therefore demands a more ample investigation: and, as I cannot accord with such inference, it is incumbent on me to discuss the question more at large, and candidly to state the grounds of my rejecting it.

The first and most essential step to a correct knowledge of any subject, is, to dispel vulgar and erroneous prejudices, by opposing to them positive facts, and inductions palpable and capable of proof; and until false impressions are weakened or dispersed, it is in vain to attempt to substitute truth for error. Hence it will be impossible to avoid prolixity in this section.

The most prevalent opinion is, that the poison of mussels is of a *mineral origin*, form their feeding where *copperas* is found. The same source has been ascribed for the deleterious qualities of various fish found in the West-Indian seas‡. Others assert that it is *cupreous;* which seems most favoured by Dr.

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* Vide *Philosophical Transactions,* vol. lxvi. p. 544.

† Vide *Medical and Physical Journal,* vol. xxv. p. 398.

‡ Vide *Dr. Thomas on Fish-Poison, Mem. Med. Soc. of London,* vol. v.

Chisholm; some, that it arises from fish feeding on the *galere* or *gally-fish (medusæ* and *holothuriæ)*; others again, from the *manchenelle apple*; and Dr. James Clark, of Dominica, conceives that it is from their food consisting of *submarine narcotic plants**, such as the *corallina opuntia.*

Of all these various hypotheses, the arguments adduced in support of its being of mineral origin have the greatest plausibility; and, consequently, require the most serious examination. The evidences for the rest are so improbable, imaginary, or contradictory, that I shall only cursorily treat of them.

The idea that the deleterious quality is derived from copperas, is founded in ignorance of the history and nature of that substance; and perhaps from certain fish, as *oysters*, &c. frequently being of a greenish hue†.

The name, *Copperas*, carries with it, the impression that this substance is derived from copper. But copperas, the green vitriol of commerce, is not an educt of that metal; but is a sulphate of iron—a salt that is not an active poison; and seldom injurious, except when improperly administered as a medicine, or in too large quantities. The error, too, has probably been strengthened from the similarity in colour of copperas and verdigris; which last salt, as commonly met with, *is* a subacetate of copper.

Among the many accounts that fish-poison has a metallic origin, I have not met with a single proof, nor one good reason that is worthy of respect advanced, except Dr. Chisholm's, of copper being its basis. But as Dr. C. admits that he has little or no confidence in the results of his own inquiries or observations, they are fully open to animadversion: and as he is manifestly wrong, even in some of the principles he has assumed, to examine them is essential to the forming of more correct data.

I. In what manner is copper accessible to fish?

II. Is copper, if accessible to, and becoming a part of their food, inimical to fish?

III. Are the symptoms, characteristic of the operation of fish-poison, ever produced by animals or substances, of which copper is not known or suspected to be a component part?

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* Vide *Medical Facts and Observations,* vol. vii. p. 294.

† The colouring of oysters, green, is sometimes undoubtedly an operation of Nature. But it is also adopted, by artifice, from epicurean motives. The Dutch formerly took oysters from beds on our coasts, and deposited them on their own, where from experience they knew they would soon acquire that greenish tint that renders them more desirable to the luxurious. Native oysters, transposed into the Colchester beds, soon assume this

I. Dr. Chisholm conceives that copper may be held in solution by the water of the tropical seas; and thus become a part of the food of fish.

Granting that he is correct in his geological description of Antigua, the contiguous islands, and of the straits that insulate them; and that copper abounds among them—is that a feasible reason for supposing that copper is actually held in solution in the water of those seas?

Sea-water, in a great variety of places and latitudes, has been chemically examined, for the purpose of ascertaining its constituents; and although these may sometimes have varied in their proportions, yet no trace of copper or any other metal has, I believe, ever been detected. Modern research has no where discovered, that the sea that laves the shore of a country abounding in mineral productions partakes of the qualities of such minerals.

To support his theory, that copper may be held in solution in the sea-water, round the islands of Antigua, &c. Dr. Chisholm says, that "if heat is a necessary condition in the solution of copper by the muriatic acid, (the basis, he observes, of sea-water,) we can the more readily perceive the cause of the natural solution of this metal in the West-Indian or tropical seas;" and concludes, that the temperature of the sea-water is there much greater than in cold or temperate climates; arising—1. from the innumerable submarine volcanoes and pyritous beds;—2. from the insupportable heat of the sand in many places;—3. *from the proportion of the oxygen in the atmosphere of the torrid zone being so much greater than in other regions;*—and hence there is a probability "of the oxygenation of the muriatic acid being a frequent natural chemical combination*."

Now it has been proved by experiments, particularly those of Humboldt and Bonpland†, that although the temperature of the surface of the sea in the torrid zone be nearly equal

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appearance; and are hence more esteemed. In these situations there is always a large quantity of a green deposit from the sea, probably the vegetating germs of marine *confervæ* and *fuci;* and which impart their colour to the oysters. The facility of dying even the bones of living animals, by the absorption of coloured vegetable infusions, is well known to physiologists. Hence the green colour perceivable in an oyster, which is almost diaphanous when out of the shell, is easy of solution. The bones of the Gar-fish or sea-needle (Esox *belone*) turn green by boiling; yet this fish has never really proved unwholesome, though often suspected.

* Vide *Edin. Med. and Surg. Journal,* vol. iv. p. 401.

† Vide *Political Essay on New Spain,* vol. iv. p. 149.; and *Personal Narrative of Travels to the Equinoctial Regions, &c.* vol. ii. p. 50.

to the surrounding atmosphere; yet, that at a greater depth, the temperature is much lower, varying with the shallows and with the currents flowing from different climates. The same results followed at Teneriffe, although in the vicinity of volcanoes; and also at Cumana, which in latitude and longitude differs but little from the Caribbean Isles; and where, even on the sea, it might be said, from very recent and melancholy experience, that they were over subterranean fires. The difference of temperature of the sea, in high or low latitudes, is not so great as might, from the variance of heat of climates, be supposed*: for it has been invariably found, that where the temperature of the atmosphere is warmer than the surface of the sea, the superficial water was hotter than at a great depth; and when the atmosphere was colder than the surface of the sea, the superficial water was colder than that which was deeper. By which wise law of Nature, a beneficent provision is made against the excess of heat or cold in the habitable world. Hence I conclude, such a high degree of temperature as Dr. Chisholm finds prevenient for a solution of copper in sea-water, to be utterly impossible†.

If there be any dependance on chemistry, it has been ascertained, by the most accurate experiments, that the quantity of oxygen in the atmosphere of every climate and place is precisely the same. Therefore, the theories of the solution of copper in sea-water, and the hyperoxigenation of copper in the torrid, more readily than in the temperate zones, must be fallacious..

II. The superficies of the island of Antigua in the Caribbean Seas, and of Anglesea in St. George's Channel, almost exactly correspond. Dr. C. says, he saw considerable traces of copper in the former: the latter is known to produce immense quantities of this metal; and the smelting houses where it is separated, being on the sea-shore, the surrounding water may be suspected, in some degree, to be impregnated: yet the fish that frequent it are not remarkable for any poisonous qualities.

Since copper has been so much used for sheathing the bottoms of ships, the fishermen of the Thames and the Medway,

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* The German Sea is but little more than three degrees colder than the Atlantic, in winter; while it is five degrees *warmer* in summer. The Mediterranean Sea is warmer, both summer and winter, than the Atlantic.—*Vide Kirwan's Temperature of Latitude,* p. 53.

† Eller has proved, by experiment, that if water, containing one twentieth of muriate of soda (common salt), be boiled in a copper vessel, and the liquor be evaporated, an oxide of copper may be obtained: but the heat must be carried to the *boiling* point to produce this result. Happily, however, he found also, that if meat, fish, or lard be boiled in this same solution of salt and water, no cupreous particles were detected.—Vide *Medical Repository,* vol. ii. p. 495.

have observed that some sorts of fish, particularly salmon, have deserted those rivers; and others are to be found only in those parts where such vessels have little or no access: evincing that the copper is obnoxious to their taste and increase. Besides, is it not notorious, that if the bottoms of ships, returned from a long voyage, be examined, few or no shell-fish, comparatively, are found adhering to those which are copper-bottomed, while those not coppered are loaded with them?

A frigate was stranded on one of the Virgin Islands; and to her copper bottom some oysters were found adhering: of these the crew ate, and they were ill: whence Dr. C. imagines they were impregnated with that metal. But does it follow, if shell-fish attach themselves to the bottom of a vessel, that they derive their nutriment from it, any more than when attached to a rock—their more natural and common refuge? The real cause of these oysters proving unwholesome will be hereafter suggested. Hence it is probable, that, if not actually inimical, copper is obnoxious to fish.

III. Although the symptoms of fish-poison vary in different persons, resulting from different circumstances, constitutional or accidental, yet they certainly bear a remarkable uniformity in all; as if produced by one and the same cause. But the same effects have been occasioned by fish caught in the main ocean, as well as by those taken in shallow waters, nearer the land;—a situation where no cupreous impregnation, from food, could be reasonably supposed to occur.

The symptoms, from eating of land-crabs, many drupaceous fruits*, almonds†, &c., are strikingly analogous to those of fish-poison. These substances have exercised their noxious properties simultaneously upon several persons, partaking of them; which could not, therefore, be imputed to predisposition or idiosyncrasy, as might be suspected when one only of a party is affected.

There being both animal and vegetable substances known in which no copper can be suspected to be latent, yet exciting effects on the human body resembling those from fish-poison;

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* Dr. Winterbottom says, that four persons were affected with *Urticaria*, and the other attendant symptoms, from eating a fruit like a damson, in the woods of Sierra Leone. He also mentions that these peculiar symptoms sometimes are excited by compounds, such as salmon with milk; when, either taken singly, is harmless.—Vide *Med. Facts and Observations*, vol. v. p. 57, 59, 60.

† M. *Levillain*, and his companions, were seized with severe vomitings, cramps, vertigo, &c. from eating a species of almond, the size of a walnut, which they gathered in the woods *à la Terre d'Edels*.—Vide *Voyage de Decouvertes aux Terres Australes, par M. Peron*, tom. i. p. 185.

and no fact to prove the existence of copper in the food of fish; I feel justified in concluding that the basis of fish-poison is not cupreous. Although I think it not impossible that it may be hereafter discovered, that whatever be the principle, it will be found in its nature to be in all substances synchronous.

There is mention made by Dr. Chisholm of a fact, that would, reasoning *à fortiori* from its coincidence with the results of very recent experiments, go much farther to support the theory of fish-poison having a cupreous basis, than any argument I have yet seen.

M. Orfila, in his most admirable work *(Traité des Poisons tirés des trois règnes; ou Toxicologie générale)*, affirms, that *sugar* is a most decided and certain counter-poison to copper; and, upon the authority of *M. Marcelin Duval*, who first proposed its exhibition, asserts that either in solution or substance, as an antidote, it has never failed of success*.

Now Dr. C. informs us† that his friend Mr. W. Stevenson, late of St. Kitt's, always administered the fresh juice of the sugar-cane as an antidote to fish-poison in the West Indies, with the happiest effects; and that when this could not be procured by the common people, they drank the expressed juice of the sweet potatoe *(Convolvulus battatas)* with the same success.

It is also evident, that there is a very striking resemblance of the symptoms from copper and those from fish-poison on the human frame.

M. Orfila has given a summary of the symptoms attendant on the operation of cupreous poison‡: they have been also accurately described by many other writers, with whose description his corresponds; and it is impossible not to admit the affinity of the effects of fish-poison and copper. But yet there is, in all the histories I have read of poison from copper, the absence of the characteristic diagnostic of poison from fish—the violent cutaneous irritation and peculiar eruption, or nettle-

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* Vide *Repository*, vol. ii. p. 499.

† Vide *Edinburgh Journal*, vol. v. p. 415.

‡ "The taste, acrid, styptic, coppery; the tongue, dry and parched; a sense of strangulation in the throat; coppery eructations; continual spitting; nausea; severe vomiting; or fruitless efforts to vomit, a sensation of pulling of the stomach, which is often very painful; dreadful colic; very frequent, sometimes bloody and black stools, with tenesmus; debility; the abdomen inflated and painful; the pulse small, irregular, hard, and quick; syncope; the heat natural, and thirst ardent; respiration difficult; præcordial anxiety; cold sweats; scanty urine; violent cephalalgia; vertigo; prostration of strength in the joints; cramps; convulsions; and death."—Vide *Traité des Poisons, &c.* p. 273.

rash,—a symptom, which, although attending poisoning by many other substances*, is not an effect of copper, yet it appears uniformly from fish-poison. This circumstance sufficiently marks a difference in the nature of the poisons; and proves, in my opinion, that they have not the same origin. Nor can I admit that they are, because sugar is an antidote to both poisons. Were we to adopt such an inference, we ought to class diseases according to the remedies of the Materia Medica, rather than by their characteristic symptoms. Nevertheless, if sugar be an antidote to both poisons, it affords just ground for hypothesis, the correctness of which ought to be tested by the ordeal of well-conducted experiments†.

Next to the opinion of a metallic origin, ranks that which supposes the poisonous qualities of fish to be derived from their feeding on gally-fish (*medusæ* and *holothuriæ*). But, ere we attach credit to this report, it should be first proved that these inhabitants of the deep are in themselves poisonous.

Mr. J. R. Forster conceives the poisonous property of fish arises from their feeding on *molluscæ*‡: but, forgetting that he has delivered such an opinion, in another part of his work he says, *molluscæ* are articles of food for the inhabitants of the islands of the Pacific Ocean! It is not improbable that the noxious qualities of the *medusæ* may have been inferred from the well-known phosphorescent and electric properties some of the species (*medusa noctiluca* and *M. pelagica*) possess§. Possibly *M. Bomare* may have been influenced in his imputation of their venomous qualities from the same causes; as he says: "que s'il touche la chair de quelque autre animal, il y cause une chaleure extraordinaire, &c." These molluscæ are actually innocuous in the European Seas: therefore, if ever they are poisonous as food between the tropics, it is most likely from the same occult cause that affects so generally various fish of those latitudes.

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* The rash, mentioned by Dr. Percival, attending on the young lady poisoned by the eating of pickles impregnated with copper, was that only which is often observed arising from acrid and indigestible substances taken into the stomach.—Vide *Percival's Works*, vol. iv. p. 221.

† Dr. Chisholm relates, on the same authority, that the juice of the sugar-cane was administered to a dog, apparently in the agonies of death from eating of arsenic that had been mixed for killing of rats; and that his recovery was almost immediate. M. Orfila, too, advises the taking of large quantities of sugar, honey and water, &c., to obviate the effects of poisoning from arsenic.

‡ Vide *Observations on a Voyage round the World*, p. 648.

§ Mr. Forbes, in his *Oriental Memoirs*, mentions some poisonous *medusæ* in one of his voyages; but in a manner not likely to inspire any confidence in the account.

That this deleterious principle should exist in so great a variety of fish inhabiting so vast an extent of sea, is positive proof that it cannot be the consequence of the manchenelle apple —a product of the land only: and that it proceeds from feeding on sub-marine narcotic plants, there is not the slightest testimony. I shall therefore dismiss these opinions, as requiring no formal refutation.

It is not a little singular, and it is certainly unfortunate as far as regards evidence of food being the cause of the poisonous qualities of fish, that so few of those who have felt or witnessed its effects, have examined the contents of the stomachs of fish which have proved deleterious—the only true test, surely, of this disputed point. Mr. Forster intended so to do; but, unfortunately, let every opportunity slip: and Mr. Quarrier is the only person who speaks positively from personal inspection as to the fact. He states*, that in the stomach of the albicore, which proved poisonous, nothing was found but the small-fish it had devoured.

Such are the grounds to support the hypothesis, that the poisonous properties of fish depend on the substances on which they feed†. Upon a dispassionate review of them, we may fairly reject all inductions from such premises.

6. *Is it a morbid change in the system of the fish?*—The physical changes to which, I presume, all kinds of fish are subject, occur, no doubt, at regular and marked periods. Some of the fish of northern latitudes, however, sustain little or no perceptible change; are always edible; and rarely, if ever, deleterious. But the fish, noticed as producing the anomalous and deleterious effects that are sometimes observed in Europe, are those that contain an oily quality, and are luscious and high flavoured. These, such as salmon, herrings, pilchards, sprats, &c. Cullen remarks, though less easily digested, and more irritating to the system, are the most nutritious‡: they may be denominated *oleaginous*—that is, when in a state of perfection, possessing an excess of oil. This oil has an aroma peculiar to, and distinctive of each kind of fish; and upon which the flavour depends.

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* Vide *Medical and Physical Journal,* vol. xxv. p. 398.

† I do not mean to assert, that the flesh of an animal cannot be imbued with a deleterious quality from that of its food. Dr. Barton says, that the common pheasants proved fatal to many persons, in America, from the birds having eaten of the leaves and buds of the *kalmia latifolia.* Vide *American Phil. Trans.* vol. v. No. 7.

‡ Vide *Materia Medica*—of *Aliments.*

If such fish be caught out of season, they are deficient of this oil; and the smell, taste, and colour, are different or defective. These remarks, also, apply to several shell-fish; and these, though not known to possess the same quantity of oil as some fish, have a portion of it, and a characteristic odour, viscidity, and richness, that they also lose at certain periods. The *crustacea*, also, which annually cast their shells, undergo changes that are truly wonderful. The fish of this hemisphere, during such changes, are unquestionably less nourishing, and, perhaps, may be unwholesome; but are never, on this account, virulently poisonous.

The black land-crab (*cancer terrestris*, or *ruricolus*), which, at certain seasons, is deemed in the West Indies a great delicacy, at others occasions the same symptoms as those arising from fish-poison. This, too, is imputed to the quality of its food: because, during its abode in the mountains, it feeds on the leaves and produce of the mountain mahault, or manchenelle. And as a proof that this deleterious quality is derived from these poisonous vegetables, it is stated, that if the crabs are put into coops, purged with the leaves of the physic nut (*jatropha curcas*), and fed on wholesome vegetables, they became perfectly innocuous. They migrate, periodically, in March; and are regulated by the same law, call it either reason or instinct, that prompts many kinds of animals to congregate, and migrate, for change of climate, food, or the purposes of procreation. If animals, during the migrating season, be examined, great alterations in their economy are perceptible; which often destroys numbers of them; and they are then unwholesome, if not pernicious. Thus it is that cause and effect are often confounded. May not this land-crab, during the time it frequents the mountains, be dangerous, owing to a depraved or vitiated condition of its secretions only? for, when placed in a more genial situation, nutritious diet in a little time improves its health, and renders it wholesome*.

In alluding to the cause of poison in mussels, Dr. Rony rejects the popular notion, that it proceeds from little crabs lodging within the mussels; as he likewise does *Moehring*'s opinion (*Eph. d'Allem.* an. 1774), that it arises from two diseases to which the fish is subject; one from moss (*confervæ*)

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* It is remarkable that the bag or stomach of this creature changes its juices with the state of the body; and while poor is full of a black, bitter, disagreeable fluid, which diminishes as it fattens; and at length the flesh acquires a delicate, rich flavour.—Vide *Brown's History of Jamaica*, p. 423.

A certain kind of lobster, in much esteem in Japan, is observed, if eaten when a part of it is of a black hue, to occasion "the belly-ache and cholera morbus."—Vide *Kæmpfer's History of Japan*, p. 138.

insinuating its roots into the shells, and thus exposing the fish to be gradually dissolved by the constant admission of water; and the other, from a kind of tubercle observed on the fish, and supposed to arise from the dissolution of the shell. He refers, in fact, for the cause, to a morbid condition of the fish*.

Dr. Chisholm and other writers affirm, that the safe or dangerous state of the larger and more rapacious fish, as the barracuda, &c. is to be detected; for that there are certain marks observable, indicative of the morbid state; during which they are poisonous. These signs are: the teeth dark-coloured, the gums swelled and bloody, and the chaps corroded and bloody: they are then particularly languid, and emit a peculiar smell. It has been surmized that this morbid appearance proceeds from the fish themselves being poisoned by the food they have eaten; and that it is during the action only of this food that the fish is injurious to those who partake of it†. But have we any reason to imagine that fish are not endowed with the same instinctive faculty as other animals, in choosing their food? Is it not more rational, to ascribe these morbid changes, especially as they are observed to be periodical, to a natural rather than to an artificial or accidental cause‡?

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* *Gazette de Santé*, March 21, 1815.

† Many vulgar and absurd prejudices exist against the wholesomeness of various animals, because some feed on substances known to be prejudicial to man, or because they are so to other animals. But have we not abundant proofs that many vegetables, that are virulent poisons to some, are to others objects eagerly sought, and devoured; and on which they fatten?

Tantaque in his rebus distantia, differitasque est,
Ut quod aliis cibus est, aliis fuat acre venenum.
LUCRET. de Rerum Natura, lib. iv.

Substances may be assimilated by the digestive organs, without imparting their pernicious property to the flesh of the animal.

‡ Our knowledge of Natural History is yet by far too circumscribed, to enable us to draw decisive conclusions. Domesticated animals become the creatures of necessity, by which their actions are guided, volition being almost denied. Neither, perhaps, is it possible that human conception can ever comprehend the laws by which an Omnipotent Power regulates the operations of its own creation. That all animals possessing life, seek and obtain some kind of food for their support, is certain. But do we know what they require, or what is their capability of abstinence? Herrings, at certain seasons, frequent particular parts of the seas in such immense shoals, as to extend many miles; and of a proportionable depth. They are then in the highest condition; but if their stomachs and intestines be at that time examined, not a trace of food is to be detected. It is when they are out of season, when evidently in a morbid state only, that food is to be found in their stomachs. (Vide *Dr. Anderson's Researches in Agriculture, Natural History, &c.* vol. ii.) Judging from the multitude, we might suppose that no particular spot could furnish food for the flight of the aquatic birds, Capt. Flinders saw, near Van Diemian's Land (Vide *Voyage to Terra Australis*),

Experience proves, that the yellow-bill'd sprat, the most poisonous of all the fish of the Caribbean Seas, is highly dangerous immediately after it returns from depositing its spawn; and much less (many say it is entirely) innocuous at other seasons—a fact strongly corroborative of the poison depending on some morbid condition.

But there are many who have noticed the phenomena of fish-poison, and have regarded them uniformly as the result and effect of a state of putrescency. It is clear, that the mussels which the Master Pearsons ate, and that proved so fatal, were dead, from the sudden subsidence of the water in the basin of the canal two or three days previously to their being removed, and which before had covered the bottom of the vessel to which they were adherent; they were also tainted—that is, in an incipient state of putrefaction. There is no question that the oysters taken from the bottom of the frigate (see page 458) were in the same condition*.

Another fact that strengthens the opinion that the poisonous properties of mussels depend on a state of putrescency is, that Mr. Barrie, the officer who accompanied Captain Vancouver's men, relates, that those which produced such fatal effects were collected on the shore; but it was observed, that the same sort of mussels, gathered from the rocks, were innocuous†. Many of the former were probably thrown up, and left by the sea, and

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which, by computation, must have amounted "to one hundred and fifty-one millions five hundred thousand birds;" and to lodge them, would require an extent of space eighteen and a half square geographic miles! The same shoal of fishes (*bonnettas*) followed Peyrouse's ships fifteen hundred leagues; and left them only when they entered among the Sandwich Islands (Vide *Peyrouse's Voyage, trans.* p. 353.)—a convincing proof of their vigour, and pertinacious instinct in pursuit of their favourite and probably natural food.

How inane and futile, therefore, must all reasoning be, founded on speculations of properties imbibed or imparted by animals from the nature or quantity of their food!

* It is generally understood that oysters, like mussels, do not possess the power of locomotion. *Reaumur* proved by experiments, that when mussels had once fastened themselves to the sides of the vessels in which they were placed, they remained immoveable, even when the water was withdrawn, which was the source of their existence. Hence it appears more probable, that the mussels eaten by the young Pearsons must have been dead. The immobility of this species of shell-fish, when once fixed, is confirmed by all fishermen, who remark also that the propagation of them on ships' bottoms is exceedingly rapid. The bottoms of the frigate and the fishing-smack were both exposed to the rays of a burning sun; and the fish on them to so great a degree of heat, that they soon became tainted: yet the oysters from a vessel copper-bottomed, and the mussels from one with her bottom pitched, produced the same symptoms.

† *Vancouver's Voyage*, vol. ii. p. 286.

were stale and tainted; the latter must have been covered by every tide, and were consequently fresh and sweet.

It is far from my intention to attempt to examine whether a state of putrefaction can be co-existent with vitality, or whether the vital power be always extinct before that process commences. But I think it must be allowed that when the secretions are altered and vitiated, and the functions of the animal impaired by diseased action, there is existing a condition of parts very favourable to putrefaction; and that there really is then a predisposition to undergo decomposition with great rapidity: and further, that such decomposition may be accelerated or retarded by the degree of temperature to which the body is exposed.

It is confidently asserted that the fish between the tropics are more dangerous at certain seasons than at others. Indeed on this point all reports so completely coincide, that it demands our credence till disproved. *M. de Beunie* and others have observed the same of mussels in the German Ocean. And it is important to note, that the period when it appears that fish are most poisonous, is, during the months when the influence of the sun is greatest, and consequently the temperature highest. I consider this circumstance so important and relevant to the question, that I shall place in chronological order the instances recorded of poisoning from fish which I have met with, and the dates when they occurred.

Quieros relates, that when in latitude 14° South, some excellent fish were caught; but that "it happened, that amongst SOME *pargos* (Forster supposes these to be the *Sparus pagrus*) bringing SOME that had eaten *poisonous plants*, all parts of the flesh became empoisoned," and the crews of his ships were disabled by eating them. He says, also, "the ships appeared like the hospitals of a city which had the plague, there was none who could stand on their feet." These fish were caught about the 1st of *June* 1606. *The fish eaten the day they were caught produced no bad effects; but on the following day they were a virulent poison**.

Captain Cook and the Messrs. Forsters were poisoned by the *sparus pagrus* (Linn.), and the crew soon after by a species of *tetrodon (sceleratus)* caught off New Caledonia. This was in *July*. Mr. Forster remarks, that these fish were dressed the day *after* they were taken; and those that *were salted, and not eaten till four days after they were caught, were most deleterious*†. The natives were well acquainted with the evil properties of this fish, and always refused it.

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* Vide *Dalrymple's Coll. of Voyages*, p. 140, 141.

† Vide *Forster's Observations on a Voyage round the World*, p. 613.

Mr. Quarrier, Surgeon of His Majesty's ship Princess Charlotte, mentions* that, in lat. 00° 16′ south, long. 5° 47′ west, they caught an albicore weighing 176 lbs. It was immediately and carefully cleansed of the offal, cut into junks, and hung up; a part was eaten *the same day* without any ill effects; but on *the following day* a young midshipman of a plethoric habit was alarmingly ill from eating of the same parts that were before innocuous; and several other officers were affected, though in a slighter degree. The mode of cooking made no difference in the effects. *This fish was taken on the 15th of September.*

Mr. Q. further remarks, as a singular fact, that, if the mackarel caught at St. Helena be *kept a night*, they are invariably poisonous; but if dressed the same day they are taken, they are excellent and harmless.

The mussels that killed Captain Vancouver's man, and poisoned others of his crew †, were eaten on the 15th of *June*; those that destroyed the young Pearsons in *July*.

From the information collected by Drs. Thomas, James Clarke, and Chisholm, in the West Indies, the months of *May*, *June*, and *July*, after the fish have spawned, are considered the most dangerous.

M. de Beunic states that mussels are deleterious in May, June, and July only. But *M. du Rondeau* says‡ they are poisonous in other months. To the truth of which, in the few instances I have seen, I can vouch, though it is a generally-received opinion that they are most inimical in the hottest weather||. But this discrepancy, as to the time when mussels are or are not deleterious, is immaterial; for except in those cases occurring from idiosyncrasy of habit, I believe that every instance of their poisonous effect would, if it were traced, be found to arise from their being tainted,

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* Vide *Med. and Phys. Journal*, vol. xxv. p. 398.

† It should be remarked, that though this place be situated on the Continent of America in the North Pacific Ocean, yet it is in latitude (52° 48′) parallel with that of England, and the time being Midsummer, these mussels were possibly exposed to a temperature very similar to those that proved so fatal at Gravesend.

‡ *Memoires de l'Acad. de Bruxelles*, tom. i. et ii.

|| The Editor of the *Gazette de Santé*, March 21, 1815, asserts, that mussels possess deleterious qualities in humid weather only; and that he never observed any ill effects from them in dry weather. The cases detailed by *Rony* in this publication occurred early in *March*. It is possible, owing to the comparative coolness of the month, that the mussels were but slightly tainted; and, therefore, in the worst of the cases, some of the most marked symptoms of fish-poison, such as nausea, tormina, and diarrhœa, were not present. It is not wonderful that poisoning from mussels is, as said, frequent in Paris, a city situated a hundred miles inland, and where all fish are brought to its market by land-carriage.

or from some one or more of them being so, and intermixed with those that were fresh and good. Nothing can be more probable than such accidents; because a great number being generally dressed together, and mingled in the same dish, the detection of one or two tainted, among so many, would be very difficult. Of course, the hotter the weather, the greater the probability of tainted fish; and hence the more frequent occurrence of poison from fish in the summer months.

The *Tetrodon ocellatus* abounds on the coasts of China and Japan. It is accounted very delicious by the inhabitants of the latter country; but it is known to be so poisonous, that the military are forbidden, by a royal edict, from eating it. But others partake of it largely if it be gutted and cleansed, and eaten as soon as caught: but, if *not fresh*, it is highly dangerous*.

When we have the concurrent and unsuspected, because adventitious testimonies just enumerated, of Quieros, Forster, Thomas, Clarke, Chisholm, Quarrier, and Kœmpfer, that the same fish, when eaten fresh, or having no marks of disease, were not only harmless, but even excellent; and that the same, and even parts, though salted, of the same innocuous fish, on the following day, were highly poisonous, doubts if this poison exist in the healthy living fish are surely justifiable: and upon such authorities impartially selected, and I know of none that invalidate them, I presume to infer, that this poisonous property exists in, or is entirely dependant on a morbid condition of the fish that communicates it.

7. *Is it a poison*, sui generis?—Where nothing is certain, and there are no data from which clear deductions can result, theory may not only be tolerated, but be commendable; for what is theorizing but the exercise of our thinking faculties, that prompts to practical illustration, and the perfection of human exertions? I have attempted to shew, that the opinions hitherto entertained of the seat, causes, and nature of fish-poison are erroneous. What then is the nature of fish-poison?

Many facts have been adduced, that, I think, must incline any one to suspect at least, if not to coincide in my opinion, that this peculiar virus neither exists in, nor is the product of a sound and healthy fish; consequently that it is never found, excepting when fish have undergone some morbid change, in which state the properties of the animal are altered.

The flesh of fish is in all temperatures prone to a more rapid decay than that of warm-blooded animals. It is certainly

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* Vide *Kœmpfer's History of Japan*, vol. i. p. 134 and 135.

very probable, that if a fish be caught in this unhealthy condition, it will, upon exposure to an intense degree of atmospheric heat, be more liable to sudden decomposition or putrefaction than one that is sound; and the rapidity of this decomposition will, in a great degree, be regulated by its state of health. A sick fish, therefore, would exhibit its deleterious properties, though eaten immediately it was caught; while a healthy one will be wholesome on the first day, prejudicial on the second, and on the third produce virulent effects. So far as accounts can be relied on, and I have quoted some that I think strongly support the inference, it is manifest, that the deleterious qualities of fish, if not originating with the extinction of life, yet certainly then become considerably more active, and actually increase with the time the fish is kept. The proof of this is easy of experiment.

By certain chemical operations, various substances have been discovered in animal matter, that are only evolved and detected by the processes employed. Putrefaction is a natural chemical operation, during which many substances are disengaged and new properties evolved, which were before latent and combined. To produce these results, a certain quantity of heat seems requisite. Some of these products of animal matter, such as prussic and fluoric acid, &c. have been proved to be most potent and active poisons when applied to the living animal. May not, therefore, the bodies of fish in the elaboratory of Nature experience certain chemical combinations or decompositions during their putrefactive process, the educt of which is a property, *sui generis*, denominated fish-poison? Cullen actually says, that "their putrefaction is with different circumstances from that of hot-blooded animals*."

It may be objected, that different kinds of meat and fish in a highly putrid state, are eaten in different parts of the globe, and with impunity; and, therefore, the deleterious qualities of fish cannot arise from common putrefaction. Unquestionably, something more than what takes place in the process of putrefaction in temperate climates is required, to account for this peculiar virus. It is remarked, that the instances of poisoning from fish are chiefly confined within the tropics; or at least that the poison in those latitudes is most virulent, and found in the greatest variety of fish. But be it remembered, that, nearest the equator, organized nature is most powerful and active, the temperature is highest, and the sun there produces effects very remarkable and different in many respects to those ex-

* Vide *Materia Medica*, vol i. p. 388.

perienced in the temperate zones*; and the higher the temperature, the more rapid is putrefaction; provided the heat be not so intense as to reduce the animal body to siccity.

In high latitudes, therefore, may not some occult property be evolved in the decomposition of fish, that rarely or never occurs in fish found much beyond the tropics? except in mussels and incidentally in other shell-fish; but in which latter case the effect is rather ascribable to constitutional pre-disposition in the person eating them, than to any thing peculiar to the animal.

Are there no circumstances that, independent on the food of fish, conduce to explain why this property may be almost confined to the fish of tropical seas?

The temperature of the surface of the ocean near the equator is generally within a few degrees of that of the atmosphere, and is many degrees cooler than on shore: deeper in the sea it varies, but is always much lower than on the surface. Fish that are just caught in these latitudes are usually exposed to an atmosphere highly rarified, and a heat frequently above 100° of Faht. under a vertical sun, and, when landed, are placed over a highly reverberating soil. In tropical seas, a temperature of fifteen degrees below that of the surface of the ocean, and often of forty degrees below that on the land, is experienced. Hence the putrefaction of fish caught there and exposed to the atmosphere, must commence with the extinction of life, and proceed with a degree of rapidity much greater than that of warm-blooded animals; though even they, in the torrid zone, are known to become putrid in a few hours after they are killed.

The reverse takes place in the more temperate seas, and even in those of cold climates. Taken at the mean of a year, the temperature of parts of the European seas is higher than that of the land, and in the Lapland seas, in lat. 70° 40′, in the month of May, when the air was 27° Faht. the surface was 36°; and at the depth of 90 fathoms, it was 39°†. The

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* That heat in the same parallel of the two hemispheres produces very different effects on the human body, is singularly apparent on the skin of the inhabitants. Within the tropics, in Africa, &c. the skin is of a sooty black; but in South America, even under the equator, its colour is not darker than in the people of some parts of Europe. This may, perhaps, be geologically explained. But the heat of some parts of South America is as intense as that experienced in many parts of Africa or Asia: yet the complexion of the inhabitants of the former, is uniformly of the same colour. May not the effects of heat in the South American seas, from some cause equally inexplicable, evolve a property in some fish which is rarely found in the fish of the seas of the opposite hemisphere, though within the tropics?

† Vide *Phil. Trans.* vol. lx. p. 39.

temperature of the water of the British seas never descends below 28°; consequently when the fish are taken from seas warmer than the atmosphere, they will be long prevented from putrefying, by being in a temperature actually lower than their natural element. And if fish be placed in a still lower temperature, that is in ice, we know they will long keep sweet, and may be conveyed from a great distance to market.

As fish, therefore, immediately they are caught in tropical latitudes, are placed in such very high degrees of temperature and to the action of the sun, the rays of which are known to cause a greater intensity of heat and a peculiar action, I infer, that, between the tropics, a change takes place in character and effects dissimilar to what attends the process of putrefaction in more temperate climates; and hence a property is produced which is the poisonous quality of fish.

Upon an attentive revision of what has been adduced, I am led to the following corollaries—1. *that the poison of fish is not confined to any particular part of the animal*—2. *that it does not arise from the food of fishes*—3. *that no fish partakes of this property, unless it have undergone some morbid change*—4. *that this property is a poison,* SUI GENERIS, *always most active after the vital powers cease.*

Remarks on the antidotal or curative Means.

WHEN so little is known of the nature of any substance producing a specific and dangerous action, through the medium of the stomach, on the animal economy, we cannot expect to establish any very accurate theory, either of a prophylactic or curative plan of treatment. The first must be wholly dependent on an accurate knowlege of the nature of the poison; and as we are yet ignorant of what fish-poison is, no rules can be laid down on which there can be any reliance*: the second object may, perhaps, be attained from the observations deduced from long experience of the means which have been resorted to for relief.

Instances of the malign effects of fish-poison are so numerous, that we possess a tolerably-accurate diagnosis; and, as far as information warrants, if remedies be administered in proper time, the prognosis may be equally certain, and is generally favourable.

* As a prophylactic measure, *M. du Rondeau* recommends the dressing of mussels in vinegar and water, and a little Cayenne pepper; and he asserts that if they be boiled in this mixture, it infallibly prevents any ill effects from them: but boiling them in water only does not deprive them of their poisonous quality.

It would be tedious, and probably useless, here to enumerate minutely all the symptoms attending the eating of venomous fish: they may be collected from many writers. I will, therefore, be succinct in my account; and as briefly as possible detail what are the most efficacious modes of relief, and the remedies recommended: and if I venture to offer any conjecture on the rationale of their operation, it will be with the hesitation of one who has not experience for his guide.

When fish has been eaten, and in an hour or two afterwards a weight at the stomach, with nausea and an approach of slight vertigo, are felt, with universal uneasiness, or a numbness of any particular part of the body, constriction of the throat, a sense of heat about the head and eyes, immoderate thirst, and an eruption and itching of the skin, he may justly conclude these are the effects of this aliment. The most judicious and obvious mode of acting is instantly to relieve the first passages of the obnoxious food by an emetic, and afterwards by the operation of an active purgative. Nature generally spontaneously relieves herself; especially if mussels be the cause of offence. If the unfortunate youths at Gravesend had been so treated, as Mr. Rogers judiciously proposed had he seen them in time, or had the fish been evacuated by any natural efforts, instead of being retained twenty-four hours before complaint was made, their lives would doubtless have been preserved. Persons may be so situated, upon feeling the symptoms described, as not to be able immediately to procure any remedies. In this case it will be expedient, and easy, to irritate the fauces with the finger or a feather, till full vomiting be excited; and other means may then be safely deferred until opportunity offer of evacuating the bowels.

The drinking of vegetable acids, such as vinegar, the citric acid diluted, or lemon or lime juice, and washing the body externally with vinegar and water when it is covered with the eruption, are recommended on good authorities. But when early measures for removing the cause from the stomach and intestines have been neglected, and the poisonous food has been in part assimilated and introduced into the system, various other symptoms follow, that require treating according to circumstances and the situation of the patient. On this part of the subject Dr. Chisholm speaks with some confidence, from the result of his own experience. He recommends, where morbid changes have been produced as the *sequelæ* of the effects of fish-poison, a solution of alkalies in water. If spasm ensue, after evacuations, laudanum, in considerable doses, is necessary. Sometimes the soles of the feet have a peculiar sensation, which is best relieved by soaking them in alcohol or wine; and occasionally also a kind of pus forms under the skin, which

separates: he then has recourse to the bark, and, as an external application, the vegeto-mineral water. But when the effects produce ulceration of the body, and paralysis, he orders mercury, pushed to salivation, and bark and wine.

Dr. Clarke, of Dominica, prescribes, as an antidote, Cayenne pepper; others, spirits or wine: but these must be considered as condiments which stimulate the digestive organs, and excite them to resist the effects of obnoxious aliments, rather than as acting specifically on the poison.

I have already (page 459) noticed that *sugar* has been exhibited by Mr. Stevenson, late of St. Kitts, as an antidote for fish-poison; and that the same substance is recommended by *M. Orfila* to counteract the effects of cupreous poison: but although it cannot from this circumstance alone follow that cupreous and fish-poison are the same, yet it is in itself a very curious and singular coincidence in practice, and merits particular attention. In the paper, on the deleterious effects of mussels, in the *Gazette de Santé*, to which I have before referred, there is also mention made of remedies which have been found highly serviceable in such cases, that may by some be considered as supporting the efficacy of sugar as an antidote to fish-poison; although the French physicians have employed it as a mere vehicle for other medicines, to which alone they ascribe the relief experienced. The editors declare, that in many of the cases they have seen of this nature, large doses of æther have immediately removed all the troublesome symptoms. They advise that 20, 30, or 40 drops should be given, on a piece of *sugar*, every half-hour, or that three or four drachms may be mixed with *syrup*, and a spoonful be taken at intervals till the symptoms abate. Now a question may arise, whether the relief afforded should be attributed to the action of the æther, as a stimulus, or to a peculiar antidotal property of the sugar. *Dr. Rony*, in the case to which these observations of the editors apply, says, he administered brandy in some infusion *(animée)*; but that it afforded *no* relief; and that he then gave sulphuric æther in *sugared water*, which *did* produce some relief, although it was momentary. It will be observed that *Dr. Rony* did not exhibit the brandy with any form of sugar, and the mere stimulus of the spirit was then *inefficient;* and when a spirit (æther) was joined with sugar, in a weak solution, some good, though transitory, was obtained; but when the spirit was combined with *sugar* in the more concentrated forms of crystals or syrup, the relief was complete.

I will not attempt to decide, whether the beneficial result is to be attributed to the sugar or to the æther, or what is the *modus operandi* of either substance. The accidental exhibition

of *sugar* in these cases, with the positive evidence of Mr. Stevenson of the success attending the drinking of the sugar-cane juice, or of the sweet potatoe; and the result of the experiments reported by the learned and ingenious *Orfila*, on sugar as an antidote to the metallic poison of copper, and even to that of arsenic also, are facts highly important, and deserve serious investigation.

It has been said, that if *salt* be applied to the fish, any poisonous quality it may possess is corrected. But this is not true: and an unlimited confidence in salted fish might produce great inconveniences, if not fatal consequences. Salt did not prevent fish from poisoning Captain Cook's men; and other instances are likewise recorded, shewing that this substance does not correct the poisonous quality, if it really exist in the fish at the time of being submitted to that mode of preparation.

What are the signs by which to ascertain whether a fish be wholesome or poisonous, it is quite impossible, in the present extent of information, to determine. But there are certain indications by which it is evident the danger may be frequently observed, and of course avoided. Long experience ought to teach the inhabitants of the torrid zone, that the fish of the seas that surround their shores, found at one period wholesome and at another dangerous, undergo natural changes, which are in reality morbid conditions; and that then the probability of their being more deleterious is increased. If the accounts which I have quoted be correct, and there exists no reason to distrust them, poisonous qualities are not inherent in any healthy fish, but are always consecutive to a state of disease; or, what is probable, are acquired after the animal is dead; and that the activity of the poison augments as the period is protracted from its being caught to its being eaten. Fish, therefore, should not be dressed when there is an evident deviation from a healthy state. Whether the propensity to this property be general or applicable only to particular fish, or whether it be an adventitious circumstance, can only be satisfactorily elucidated by future inquirers.

Dr. Chisholm seems to think that chemical experiments can be seldom recurred to, in the West Indies, with a successful result. This in part is certainly true; and particularly in the prosecution of animal chemistry. But such an observation should have been in some degree qualified; because, having his authority, it is likely to be received in its most extended sense; the spirit of research be thus checked, instead of being encouraged; and the productions of Nature, which in those prolific regions assume such interesting and imposing, because novel, forms, would remain neglected and unexplored. This

remark is the less excusable, since, though it may apply to experiments on animal, and in some sort on vegetable matters, yet it is no objection to the analysis of mineral substances; and in this very passage Dr. C. acknowledges himself disposed to consider the basis of fish-poison to be metallic*.

If copper were the basis of this poison, and it were in sufficient quantity either in the first passages, or in the substance of fish, to destroy other animals, surely the employing of the known common tests of the presence of this metal, would have been facile and demonstrative in all situations. The addition of a small quantity of pure ammonia would, if copper were present, give the usual blue tinge to the contents of the stomach of the fish, or to the water in which it was boiled; or if a piece of bright iron were immersed in the suspected matter, it would instantly become coated with copper. These obvious and simple experiments might have been tried; but I cannot discover that even this has been done by any one inquisitive person.

As to the experiment of boiling a piece of silver, or an onion, with a suspected fish, as a test, and pronouncing that it is wholesome if these substances be unchanged, and that it is poisonous if they turn black; it is one liable to be affected by so many extraneous circumstances, that a reliance on it would be hazardous in the extreme: as indeed is proved by Dr. C.'s own statement.

The powers of CHEMISTRY are wonderful, and to analysis we are indebted for a rapid and more intimate acquaintance with elementary principles. Many substances hitherto unsuspected have, either by accident or by art, been detected in the animal, vegetable, and mineral kingdoms; some of which are discovered to be most virulent poisons, and become instantly fatal to animal life. How recently is it that we have known the existence of the prussic acid in such a variety of substances; still more so that the fluoric acid is to be found in bones, teeth, and urine, or that such an extraordinary substance as *Iode* is latent in the ashes of sea-weeds† ?

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* Vide *Edinburgh Medical and Surgical Journal*, vol. iv. p. 419.

† *M. Gaultier de Claubry*, in his Analyses of different *Fuci* and of Sea-Water in search of *Iode*, (Vide *Journ. de Physique, Fevrier* 1815,) found in the *fucus saccharinus*, which affords the most of this substance, both acetic and prussic acid, the latter of which is one of the most active of poisons on animals. This acid is a component of animal and of various vegetable substances, as of the *lauro cerasus*, bitter almonds, and of various drupaceous fruits. Distillation is always essential to the concentration of this

Were it established that this poison is not innate in fish, but consecutive to disease or to the extinction of vitality, its examination would be easy to all who frequent the West Indies, where poisonous fish are most numerous; and its nature would surely be easily developed by chemical tests. CULLEN, in treating of aliments, slightly alludes to the omission of this inquiry, and suggests a hope, that the nature of fish-poison would in this way be examined. As animal chemistry is now a favourite pursuit of philosophic chemists, we may hope that their attention will be extended to a subject on many accounts so interesting.

The French philosophers, as I have said, who drew up Peyrouse's instructions, directed their views to this inquiry; but that unfortunate navigator effected but a small part of their intentions. Even Labillardiere, who, as a naturalist, accompanied D'Entrecastaux when he was sent out to discover Peyrouse's fate, and complete what he had left unfinished, has not touched on it. Considering it both important and curious, it is very singular that those learned and able naturalists and travellers, Humboldt and Bonpland, in traversing the tropical seas, should have totally neglected it. Mr. Peron, in his voyage to *Terra Australis*, with able naturalists, to examine and report on objects of natural history, has contributed nothing to our knowledge of this remarkable property of fish.

Happily in this country, or indeed in any part of Europe, serious effects from fish-poison are of rare occurrence, and are chiefly confined to mussels—a food generally resorted to more from choice than necessity; and which, therefore, if dangerous, may be avoided. On this ground some writers have treated the subject lightly; and because the cases were few, and the recoveries considered certain, have pronounced it of too little importance for particular notice. But the cases of the Pearsons and Captain Vancouver's man evince that, if from ignorance of the symptoms of fish-poison, or from neglect or necessity, proper means of relief are delayed, the most deplorable and unhappy consequences may ensue. The same reasoning

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principle in the first, and in the second substance also to produce fatal effects; yet, from eating bitter almonds and stone fruits, (Vide *Med. Tracts and Observ.* vol. v. p. 57,) analogous but effects less violent have resulted, especially in hot climates. As the presence of so deleterious a poison is known to exist both in animals and vegetables, even in those to which sea-water is the *pabulum vitæ*, and is likewise concentrated by very different degrees of heat, why should not the prussic or some other poison be evolved from fish at that degree of temperature to which, when taken from the deep into the atmosphere of the torrid zone, they are suddenly exposed?

also applies, and suggests the vast importance of some clear and definite knowledge of the nature of fish-poison to those venturous navigators of the boundless deep, who, led by a love of science or spirit of enterprise, have often anxiously looked for and relied on a supply of fish to relieve their wants, or refresh their exhausted bodies; and have had reason to rue their ignorance and rashness. History has furnished many examples of the danger to which the crews of various vessels have been exposed for want of some guide to assist their judgment; where, if life have not been the forfeit, years of suffering have been entailed on them. The utility, therefore, of the inquiry must be admitted and approved. If novelty be an inducement, it has that incentive; if the love of fame operate, the discoverer's name would be enrolled high in the records of science.

It will be evident throughout these observations, that I have attempted rather to disperse existing errors, by arranging and displaying all the information that I could collect relative to fish-poison; than to offer any decided opinion of my own on its nature, its effects, or curative mode of treatment. Enough has been stated, to open a wide field of inquiry, and awaken research. I willingly leave to the experience of others, the chastening of my theories and errors; and shall bow with deference and respect to those, who, enjoying and embracing opportunity, condescend to notice my opinions, even though they may prove their fallacy.

The judicious application of a little knowledge, stimulated by an inquisitive spirit, with opportunity and industry, have surmounted greater difficulties than appear to be attendant on this investigation; and have led to the establishment of truths that have promoted the arts, ennobled science, and proved highly useful to society.

I have deferred publishing Mr. Rogers's cases, and these observations, principally in the expectation that the second volume of *M. Orfila*'s very interesting work on Poisons might speedily appear; in which, when treating on animal poisons, something applicable and satisfactory on fish-poison might be given. But even if that desired publication be produced, so long a time may elapse ere it reach this country, that I am induced no longer to delay my paper. I lament that it has run to such a length; and still more that it leads to no specific conclusions. However, I was unwilling to omit any thing I thought elucidating a subject so neglected and little understood. I pretend to nothing more than to point out a path, and to conduct inquirers to the threshold; where, if they are so disposed, they may enter, and explore the mysteries of Nature, and develope her most secret operations.

II.

Case of Tedious Parturition, with Observations on Syncope and Hæmorrhage, consequent on that process. By W. Newnham, Surgeon-Apothecary, Farnham.

If the extensive application of the obstetrical art, the firmness, patience, and prompt decision, which its practice requires, and the interesting circumstances with which it is associated, be considered; it will be impossible lightly to esteem any fact, which in the remotest degree tends to increase our acquaintance with the aberrations of Nature from the accustomed laws of parturition. With this impression, the annexed case is presented to the public eye.

On the 1st of December 1814, I was requested to visit Mrs. N. W. X., who had been taken in labour early that day. It was her first pregnancy, and she had gone the full period; was twenty-seven years of age; of a spare make and delicate habit. Examination *per vaginam* ascertained that the pelvis was sufficiently capacious, the os uteri almost fully dilated, the vertex presenting in the most favourable situation, the head entering the pelvis, and the parts all apparently disposed to dilate.

As the pains were regular and effective, a confident hope was given that labour would be happily accomplished, and in moderate time. Shortly after this, the head just entered the pelvis, and the membranes gave way. But now, instead of the expected increase of the force and frequency of pain, there occurred a gradual diminution of both; so that, although not totally suspended, yet when it did recur, it was fruitless and ineffectual. The patient being much worn out by fatigue, an opiate was exhibited at bed-time, which procured some rest, though she was still disturbed by slight pains.

On the morning of the 2nd, the case was nearly *in statu quo*, the slight pains returning only at distant intervals, and producing no effect as to advancing the head; while yet apparently nothing but defect of pain retarded the birth. A smartly purgative enema was exhibited this morning, which produced no other effect than that of unloading the large intestines. No progress could be reported in the evening: yet it was deemed advisable to wait an access of pain, and not needlessly to interfere with a process, which Nature alone was deemed capable of accomplishing. At this time the pulse was feeble, and the delicacy of the patient forbad the use of the lancet. An opiate was again exhibited, and the strength supported by a light and nutritive diet.

On the third day, the same low and ineffective pains continued, with the same position of the head of the child; there was neither hæmorrhage nor feverishness, and the motions of the infant were occasionally perceived. The patient was kept as quiet as possible, and supported by good beef tea, &c. with small quantities of weak wine and water. She now became quite anxious about her state, and would scarcely suffer me to be absent from her a moment.

In the evening of this day, the long-expected pain returned; and I hailed this event as likely soon to terminate a fatiguing case. From eight o'clock this evening, till nine o'clock on the morning of the fourth, my patient suffered with strong and almost constant bearing-down pains, but without effect. Although the head but little advanced during this period, there was no apparent obstacle to occasion the delay.

After nine o'clock on the morning of the fourth, the pains gradually subsided; the patient was exhausted; and as no sufficient progress had been made, I determined on having recourse to the forceps. These were readily applied; and the delivery slowly, and with considerable difficulty (especially after the occiput had slipped from under the pubes) accomplished about one P. M. A pretty free hæmorrhage took place; but the uterus being gently excited, soon expelled the placenta, and nothing uncommon further occurred.

The child was a remarkably fine one, but had been dead probably for some hours before delivery. On examining it, my attention was arrested by the appearance of the lower extremities, which were strongly bound together by a firm, dense, ligamentous substance, which in the delivery had been torn from its attachment. This was entirely distinct from, and much smaller in its circumference, than the funis, but exceedingly firm in its texture. So tightly had it grasped the left inferior extremity, as to have occasioned a deep sulcus all around it, leaving the bones covered only by the integuments. The left foot, below the ligature, was enormously swollen; and the limb altogether presented the appearance of having had a tight ligature passed around it at an early period, so as greatly to have obstructed the return of blood from the foot. This ligamentous substance, after closely investing the left leg, (about half an inch above the ancle,) passed tightly under the right leg and foot, but by no means so closely as under the left foot.

There can be little doubt, but the attachment of this preternatural ligament to some part of the uterus must have prevented the expulsion of the fœtus, and occasioned the tedious and difficult labour. I regret that the placenta and membranes were not particularly examined.

After her accouchement, Mrs. X. recovered rapidly. She

made no complaints whatever, and appeared to have regained her health and strength. On the morning of the 31st of December, however, just as she was beginning to rise, she complained of faintness, which increased rapidly: some wine and afterwards brandy were exhibited, but to no purpose: and when I reached her room, in less than a quarter of an hour from the time she was first seized, I discovered that the principle of vitality was extinct. Every effort which could be devised under these circumstances, to re-excite the functions of the heart and arteries proved unavailing*.

An examination *post mortem* was not permitted.

Could this suddenly-fatal syncope be connected in any way with the previous parturition, or with any peculiar condition of the uterine system?

Cases of syncope occurring *immediately*, or within a few days after delivery, have been noticed by Dr. Ramsbotham in one of your early numbers. (Vide vol. ii. p. 47.) The observance of quietude, and the careful abstinence from exertion, are pointed out as the great means of preventing this accident. These are axioms, which I conceived had been impressed on the mind of every well-informed practitioner:—but perhaps they can never be too frequently repeated, nor too strenuously urged. Nothing can be more mischievous or injurious than the officious interference of attendants, in making the woman comfortable, almost the moment after delivery. No consideration should induce the practitioner to allow this. Perhaps an attention to the support of the abdominal parietes, as soon as the cavity of the uterus is emptied, might prove beneficial. I believe that this caution, though generally admitted, is too frequently overlooked, or *inefficiently employed.*

The subject of uterine hæmorrhage has likewise occasioned some discussion in the *Repository*;—between the advocates of brandy and opium on the one hand, and digitalis, cold, &c. on the other. I suspect the opponents on this subject agree more nearly than they imagine, and that the respective modes of treatment may be applicable to different circumstances. In the commencement of uterine hæmorrhage, digitalis, cold internally to the stomach and externally applied, acids, and plugging up the vagina, may be successfully combined and employed. But when the powers of Nature begin to fail—the extremities become cold—the pulse feeble, fluttering, and scarcely to be felt—the lips pale, and the countenance hippocratic—and above all, when that irritability of the stomach, and unceasing restless-

* An equally inexplicable death from syncope, on the ninth day after delivery, is recorded.—See *Repository*, vol. ii. p. 358.

ness of the patient, which are attendant on the last stage of uterine hæmorrhage, supervene—then it is that large doses of opium will be found to allay that irritability—to support the vis vitæ, and carry the patient through the most alarming symptoms. It is with this view that large doses of opium have been long since recommended by Dr. Hamilton of Edinburgh, in his Lectures on Midwifery: and I conceive it is with this view Dr. Stewart has lately recommended a similar practice in this country.

I cannot agree with one writer in the *Repository*, who considers brandy as equally efficacious with opium. On the contrary I would give opium, where I should think brandy inadmissible. I do not mean to deny that opium acts as a stimulus, but it is a *specific stimulus*. Perhaps we are unacquainted with the *modus operandi*. Every practitioner, however, is acquainted with the powerful influence of brandy in rendering uterine pain irregular and ineffective, where this spirit has been exhibited by officious nurses: and every practitioner knows, that in tedious labour, where he has thought it right to exhibit opium, with the view of suspending irregular and ineffective uterine pain, he has been frequently and agreeably surprised, by the almost immediate occurrence of regular and effectual pain. This circumstance appears to me to indicate a difference between the simple stimulus of brandy, and the specific stimulus of opium—a difference which is still farther evinced in the treatment of uterine hæmorrhage. This paper is already so far extended, that I must for the present relinquish my previous intention of subjoining a case or two of uterine hæmorrhage, illustrative of the foregoing observations.

III.

History of an inveterate Scabies papuli-formis, cured by a Decoction of Digitalis. By F. W. Weaver, Surgeon-Apothecary, Walsall.

The great variety of infectious cutaneous diseases to which the human body is subject, under every diversity of climate, is often the source of extreme anxiety to the afflicted; and the frequent embarrassment which the practitioner experiences in making a practical discrimination among appearances very similar, though essentially different, point out this class of disease to be still an *opprobrium medicinæ*. In this state of uncertainty, as regards the pathological discrimination, arrangement, and cure of cutaneous diseases, the relation of a successful treatment of the following case of *scabies papuli-formis*, by a method somewhat out of the accustomed routine, may neither be useless nor uninteresting.

A young lady, of a plethoric habit, had been afflicted, many months, with an eruption, which was attributed by herself and female friends to a surfeit, or to a sudden exposure to cold after being over-heated. The means employed under this supposition were altogether useless, the eruption daily assuming a more formidable appearance, gradually extending over the whole surface, with the exception of the face.

When in this state, I saw the patient, and the appearances induced me to consider it as a malignant state. Under this impression, the unguentum sulphuris was largely employed, and every kind of empirical ointment was had recourse to; but all with equally little effect. During this period there was much heat and irritability in the system; the blood, when abstracted, indicated an inflammatory diathesis; and there were occasional spasmodic affections of the stomach. These being relieved by the usual methods, a strong decoction of the *digitalis purpurea* was applied to the eruption morning and evening. Under the use of this, a progressive amendment was soon visible; and in a few days every vestige of the eruption disappeared.

This fact, as far as it goes, is very striking. After sulphur, generally considered as specific, had failed, and probably mercury, in various forms, concealed in the quack ointments, had proved equally inert, a simple decoction of a well-known plant suddenly removing inveterate eruption, certainly shews the Digitalis to deserve attention in all similar cases.

IV.

History of a Case of Fungus Cerebri. By Maurice Workman, of Reading, Berks, Member of the Royal College of Surgeons, London.

If medical men were to collect and arrange all the facts connected with disease, whether of cases which have terminated successfully or otherwise, medical and surgical knowledge would much sooner arrive at a state of perfection: for, although every case may not terminate in so favourable a manner as could be wished for, yet it is a pleasing reflection to know that nothing which could have forwarded the desired event has been omitted. The case, which I am about to relate, notwithstanding its unfavourable issue, may perhaps be the happy means of alleviating the sufferings of some of our fellow-creatures.

On the 19th of July 1814, I was sent for to examine the wounds of a poor lad, aged twelve years, who had received a violent kick from a horse. Upon examination, I found that the whole of the left parietal bone was forced in upon the brain,

which was penetrated by a considerable portion of it; so that the trephine was obliged to be applied in two directions, before its removal could be accomplished. In performing the operation, several small portions of brain came away with the different spiculi of bone. The edges of the wound, which was about two inches and a half in length and one inch and a half in breadth, were then brought nearly in contact by sutures and straps of adhesive plaister; and bandages applied to retain the whole in a proper state.

20th. He appeared to go on very well; and his pulse was moderate. He was ordered fruit and vegetables as diet.

21st. He had slight convulsive twitchings on the opposite side of the face, to relieve which, eight ounces of blood were immediately taken away. On the following day, these symptoms had quite disappeared; and it was now considered proper to remove the sutures, as the tension of the parts was very considerable. The adhesive plaister alone was left to support the parts.

22d. A very considerable degree of fever being present, the following powders were ordered:

℞ Hydrargyri submuriatis gr. ij.
Antimonii Tartarizati $\frac{1}{8}$ gr.
Pulveris Tragacanthæ comp. gr. iij. Misce. Ft. pulvis, 4ta quâque horâ sumendus.

The bowels were very regular.

23d. The convulsive motion of the face having recurred, I abstracted the same quantity of blood as before, and with equal success. The powders were now ordered to be continued every six hours.

24th. The fungus of the brain began to arise, to check which a dossil of lint, dipped in liquor. calcis, was applied; and supported by an adhesive plaister and a tight bandage.

25th. The twitchings having a third time recurred, the patient was again bled; after which he went on very favourably until the 30th, when the fungus became quite unmanageable. I now resolved to remove it by ligature, which succeeded beyond my expectations, as he expressed no pain, however firm the ligature was drawn.

31st. He complained (as he had done for the last three or four days) of some uneasiness of his right side, which had in a partial degree become paralyzed. His bowels were still regular; but at intervals he was extremely restless.

August 1st. He had now but little sensation on the right side. The whole of the fungus was nearly come away; but I was surprized on the 2d, to see that it had arisen very considerably again, notwithstanding very great pressure was made on the parts.

4th. His appetite began to fail him, and he could not swallow solids; which I believe is not an uncommon symptom from the great sensibility of the œsophagus. He, however, continued without any material alteration until the 8th, when the use of his right side was completely lost. No other particular change occurred until the 18th, when the mouth became very sore; so much so, that he refused almost every thing that was offered him. For the four succeeding days, he was evidently sinking; and at four o'clock on the morning of the 20th of August, he expired; exactly thirty-two days after the kick was received.

The strictest antiphlogistic plan had been observed throughout the complaint. I have only to add, that the patient retained his faculties until the last; and notwithstanding the brain had arisen very much above the surface of the skull, yet the granulations around were very healthy: Nature made a great effort to save the patient, but she was not able to perform her design. I feel very desirous to know, from some of the numerous correspondents of the *Repository*, whether any case of fungus cerebri has terminated with success, after the application of the ligature.

PART II.

ANALYTICAL REVIEW.

I.

A Treatise on the Puerperal Fever, illustrated by Cases which occurred in Leeds and its Vicinity, in the Years 1809—1812. By William Hey, Jun. Member of the Royal College of Surgeons in London, and Surgeon of the General Infirmary, and of the House of Recovery at Leeds. 8vo. pp. 238. Longman and Co. London, 1815.

Several months ago we reviewed, at considerable length, a work of Dr. Armstrong on Puerperal Fever, which had for its object the establishment of the opinion that this formidable disease is combined, in its first stage, with an active inflammation of the abdomen; and that early, plentiful, and sometimes repeated venesection, joined to prompt, free, and frequent purging, are powerfully efficient; and indeed, notwithstanding the counter declarations of some eminent

authorities, these are the only remedies upon which a rational confidence can be founded. At the period adverted to, we stated it to be our decided opinion, that the facts brought forward by that author were perfectly conclusive, as to the method of treatment. It is, therefore, with no small degree of satisfaction, that we turn to the recently published treatise of Mr. Hey, jun., which, like that above mentioned, confirms, by authentic and numerous evidences, the great superiority and efficacy of the depletory practice, when timely adopted and properly pursued in the Puerperal Fever.

Mr. Hey divides his work into four chapters; — the first of which contains a definition of the disease, with some remarks on its character and classification; the second, its history and symptoms; the third, a number of cases, and the method of cure; while the fourth and last is chiefly occupied with general observations, as to the nature of the Puerperal Fever, and the opinions of various authors with regard to blood-letting as a remedy for it. In attempting to give a clear and comprehensive view of the most important parts of this valuable volume, we shall make some extracts from each chapter, and accompany them with such remarks as our experience has furnished; and which we trust will be found neither superfluous nor altogether useless. And if, in bearing unequivocal testimony to the practical value of the treatise before us, we should occasionally correct an error or supply an omission, we hope that the intelligent author will excuse us, as we can with truth assure him, that our animadversions emanate from the spirit of candour, and from the pure desire to assist in developing the nature, and improving the treatment, of this dreadful malady, which unfortunately we have seen deprive some interesting mothers of life, and some worthy families of happiness.

In the commencement of his treatise, Mr. Hey has ventured to give a definition of the disease: and although we are ready to admit the difficulty of the undertaking, yet, we conceive, he might have been more guarded as well as more correct. But we shall quote the passage, and point out what seems to us practically objectionable.

"The Puerperal Fever, in its most *simple* state, may be defined to be, Fever in child-bed, accompanied *with pain* which has *no complete intermission*, and *extreme soreness* in the abdomen.

"These may properly be called *pathognomonic* symptoms, because they are *inseparable* from it; and accordingly we find, that, however authors may differ in their ideas of the nature of the fever; or however different the forms of it which they describe, these symptoms *invariably* make a part of the description."

Now if it were requisite, we could bring forward some approved testimonies to shew, that there are cases of the Puer-

peral Fever to which this definition would not be applicable, though there can be no doubt but in the greater number of instances it will be found substantially accurate. Still, however, we deem it in some degree hazardous; inasmuch as, in relying upon it, the inexperienced practitioner might be prevented from opportunely detecting the existence of the disease, when the attack is secret and insidious. In fact, the very first case which the author has reported, bears strongly against some parts of his definition, and we shall, therefore, give the commencement of it, as evidence of the validity of our objection.

"The first case which occurred in my practice, was that of a young married lady, who resided in a healthy and open situation at a little distance from the town. She was safely delivered of her first child, after an easy and natural labour, in the evening of the 9th of Decemer, 1809; and remained quite well till the afternoon of the 11th, when she was seized with a rigor. I visited her soon afterwards, and found her in a state of perspiration—pulse at 120, and not full. *She had so little pain in the abdomen,* that, had I not been *minute* in my inquiries, *she would not have noticed it; pressure* on the *hypogastric region did not excite much uneasiness.*

"Though the *slight degree of pain* in this case might have tended, *under other circumstances,* to mislead my judgment, I was not unsuspicious of the nature of the disease; my attention to it being excited by the recent death in child-bed of two ladies in the suburbs of Leeds."—p. 36, 37.

This extract speaks so strongly for itself, as to require no comment. And we shall only observe that we have seen some cases of Puerperal Fever still more indistinctly marked than the foregoing, for some time after their accession, which nevertheless terminated fatally. Nay, upon the whole, we are inclined to consider such cases the most perilous, because the abdominal inflammation is often far advanced before the symptoms are sufficiently palpable to strike the attention with an alarm commensurate to the danger. Whenever, soon after delivery, the pulse acquires an unusual frequency, and the patient is troubled with restlessness or anxiety, irritability and flatulency of the stomach, uneasy respiration, and a variable state of the skin, the medical attendant should be constantly upon the watch; for, however obscure, we are certain that these are sometimes among the first indications of an attack of the genuine puerperal fever, the pulse in particular being frequently much accelerated, many hours before the least appearance of abdominal uneasiness.

Mr. Hey proceeds by making some remarks on the distinctions which authors have adopted respecting child-bed fevers generally, and the puerperal fever particularly; and concludes with some judicious observations, well deserving of attention.

"With these views, my *principal* object in noticing the distinctions above-mentioned, is to introduce a remark, or rather the statement of a fact, which, if there is any close analogy between the Puerperal Fever, as it has lately appeared in Leeds, and as it is described by authors, must be of some importance in its practical consequences.

"When the Puerperal Fever, which I propose to describe, first made its appearance in Leeds, I was so far from deriving any advantage from these distinctions, in real practice; that, on the contrary, I am persuaded, an attention to them had no inconsiderable share in restraining me from adopting that method of treatment, which afterwards proved so eminently successful.

"To explain myself further: for some time after the commencement of this dreadful malady, it proved fatal in every case that came within my knowledge; and though a few patients afterwards recovered under the treatment which my father and I had formerly found successful in the Puerperal Fever; yet the success was very small, till the method hereafter described was fully adopted.

"Alarmed by the extreme rapidity with which the disease ran through its course, and by its almost constant fatality, unlike any thing which had ever been known in Leeds, I paid particular attention to the description given of Puerperal Fever, as distinguished from inflammation of the uterus and peritonæum. From a diligent consideration of the symptoms and circumstances of the disorder, I could have no doubt, that it approached the nearest to that which is described by Dr. Clarke, as 'the Low Fever of Child-bed, connected with affection of the abdomen, which is sometimes epidemic:' and by others, as the Puerperal Fever, which has 'a strong tendency to the typhoid type.' For although it differed from them in some respects; yet it resembled them in its general character, and differed far more widely from simple inflammation of the uterus and peritonæum.

"I soon found by experience, that purging gave great relief, though it did not cure; but I was fearful of carrying it to the extent, which I afterwards found necessary; and still more so of employing the lancet, in a disease attended by such sudden and early sinking, and in which both these remedies had been so strongly condemned.

"It has just been remarked, that the disease in question was very unlike any which had ever been known in Leeds. Wherein then did the difference between this and the more common forms of Puerperal Fever consist; and what was its distinguishing characteristic? I wish it may be understood, that I speak now only of what has occurred in my own practice, without any reference to the accounts given of the disease by authors; and, with this proviso, I must say, that I know no *essential* difference, but the greater severity of the disease, no distinguishing character, but that of its being *epidemic*.—These are the only distinctions which would have been of any real value to me in practice; for I found that the remedies which were beneficial, and generally availing, in the cure of the incidental or sporadic Puerperal Fever, though proper in their kind,

and useful to a certain extent in alleviating symptoms, were totally inadequate to the cure of this severe epidemic."—pp. 9, 10, 11.

These remarks perfectly coincide with our own experience and opinions. And we are fully persuaded, that no inconsiderable mischief has been done by those minute distinctions, which have been laid down by some ingenious writers, relative to those febrile disorders of child-bed, complicated with an inflammation of some of the abdominal viscera. The reality is, that such affections have many symptoms in common, and require a similar plan of treatment, only modified by the activity and extent of the inflammation. This we hold to be a practical axiom; and however speculative men may cavil at it, we entertain no doubt, from what we have seen, that it will be amply confirmed by actual experience, even in all the varieties of the Puerperal Fever, whether sporadic or epidemic.

Not deeming it necessary to make any more remarks upon, or extracts from, the first division of the work, we shall proceed to the second, from which we give the author's history and symptoms of the disease.

"For some years past the Puerperal Fever has prevailed epidemically in different parts of Yorkshire.

"It appeared first at Barnsley, twenty miles south of Leeds, where it was very prevalent and fatal. It began there early in the year 1808, nearly two years before it became general in Leeds.

"About two years before the fever which I am now to describe made its appearance, a Puerperal Fever was epidemic in this town, which was similar in its nature to that now under consideration; but it was more partial in its extent, affecting only one district of the town, and being confined chiefly to the poor. It was also less severe in its attack, and in its result less fatal. Its prevalence likewise was of much shorter duration.

"The disease which is the subject of the following pages, commenced in the month of November 1809, and continued, in different degrees of severity, and with some considerable intermissions, till Christmas 1812; from which time, being myself confined by an indisposition which lasted throughout the year 1813, I saw no more of it.

"During the period of its continuance, it was not confined to the town and immediate vicinity of Leeds; but was more or less frequent both in the country, and at towns at some distance. So that its cause and the means of its propagation, whatever they might be, were not peculiar to one place, nor did they seem to depend upon local situation or circumstances."—pp. 15, 16.

"Till the moment of the attack, which usually took place about forty-eight hours from the time of delivery, the patient was perfectly well; when she was seized with a rigor, or shivering fit, which was succeeded by a great degree of heat often terminating in profuse perspiration, and severe pain in the abdomen. The pain had no complete intermission, sometimes no remission; but it was

commonly much aggravated at intervals, so as to resemble the throes of labour. It always left the abdomen extremely sore in the remissions, so that pressure or motion occasioned very great uneasiness.

" The pulse became rapid very early in the disease, and was sometimes strong and full in the beginning; but was more frequently weak, or soon lost the strength which at first it possessed. Within a few hours of the attack, it was generally found to beat from 110 to 150 strokes in a minute.

" The head was often affected with pain; but more commonly with giddiness and a sense of confusion; sometimes accompanied with ringing of the ears.

" After the heat which succeeded to the shivering, had gone off, the face was usually pallid, and the countenance expressed much anxiety. The degree of heat was various: the skin was generally hot and dry; but sometimes it was moist, or covered with profuse perspiration; at others, it was quite cool and pale. The tongue was white, somewhat furred, and occasionally dry in the middle; but most commonly it was moist, and not affected in any due proportion to the violence of the fever.

" If the disease came on before the secretion of milk, that secretion was entirely prevented; if afterwards, it soon disappeared, and the breasts became flaccid. The lochia were variously affected: sometimes they suffered no alteration, at others they were diminished or suppressed; but would often appear afresh during the continuance of the disease.

" In bad cases, vomiting or a tendency to it often came on early, and was sometimes one of the first symptoms; but, in general, it did not affect the patient till the disease was far advanced. The bowels were easily opened in the beginning of the disease; but if it had subsisted some hours, and had gained much ground, they usually required a long continuance of purgatives, before the constipation was completely overcome. Towards the end of the disease a spontaneous diarrhœa was a common symptom; and the evacuations were like those of the dysentery, except that there was no blood in them. The pains were frequently attended with a motion to stool.

" A degree of fulness in the hypogastric region was often evident from the first attack, and not unfrequently the uterus could easily be perceived, forming a distinct tumour above the pubes. Pressure upon it gave exquisite pain. In about six or eight hours, if the patient was not relieved, the swelling began to extend itself to the whole of the abdomen, which was soon distended to a great size, and the enlargement of the uterus was lost in the general tumefaction. A diminution in the size of that viscus was a very favourable symptom. The soreness and swelling of the abdomen occasioned great shortness of breathing, and obliged the patient to lie constantly on her back. There was always some mitigation of the disease when the breathing became slower, or the patient was able to change her position, and lie upon her side.

" If the disorder was not checked, great depression of strength and other appearances of sinking quickly supervened. The pulse

was too rapid to be counted; the tongue sometimes, though not usually, became dry and brown, and the teeth were covered with sordes; the cheeks were flushed; the countenance was wild and expressive of great distress; and the whole body was covered with a clammy sweat. At this period the violent pain of the abdomen often ceased; but its distention occasioned pains in the back, sides, and chest, sometimes accompanied with spasmodic paroxysms of dyspnœa. The patient became restless, and affected with vomiting, hiccough, delirium, and other symptoms which are usual harbingers of dissolution, though not peculiar to this fever; and the melancholy scene was usually closed in a few days from the commencement of the attack.

"This was the most common form and course of the disease, when its violence was not abated by the remedies employed. But there was great variety in its appearances, which often proved a source of embarrassment; and none was so dangerous as when the true character of the disease was concealed under the mildness of its first attack; or when an insidious truce was gained by the use of remedies not sufficiently powerful to effect a cure."—pp. 21—25.

The author then proceeds to notice some of the chief varieties which occurred either in the mode of accession, or in the progress of the disorder; from which it appears, that *the period of its attack* was from twenty hours to six days after delivery, but more frequently within the first forty-eight hours; that though *rigor* was commonly the first symptom of the disease, yet in some of the worst cases it was absent; that *pain* was a very deceitful symptom, often occasioning great embarrassment, by the irregular manner of its attack; that the *head* was generally affected with pain, but sometimes free from complaint, and no instance of real delirium occurred, till near death; that *the tongue* was never incrusted with the dry brown fur of typhus, except the disease was of long continuance, or had been improperly treated, being generally moist and soft; and though not unfrequently covered with a thick whitish fur, yet it was often little altered from its natural appearance; that the *blood* was almost universally covered with a buffy coat; and, lastly, that *the termination* of the disease, whether by death or recovery, was very uncertain. When not properly treated, however, or beyond the reach of art, it generally proved fatal in two or three days, sometimes in twenty-four hours, and once in less than eighteen from the attack.

From the ample materials possessed by the author, he might, we conceive, have given a more perspicuous description of this fever; at least, we lament, that he has not attempted, after the manner of Dr. Armstrong, a classification of its more obvious stages, founded upon the symptoms in the order of their succession; since we are convinced that such an arrangement is calculated to remove much of the obscurity with

which certain prejudiced authors have invested the pathology of the disease, by blending together the symptoms of its first and last stages, and thus giving it a general aspect and character equally inconsistent with its true nature and appearance.

From the 35th to the 153d page, the volume is occupied with the detail of no less than twenty-six cases*; and though a much smaller number might probably have sufficed, they are certainly detailed with candour and clearness. At first, our author appears to have been very unfortunate in his treatment of the epidemic described; and, as he chiefly confided in purgatives, lost by far the greater proportion of his patients. But pursuing the light of a better pathology and practice, he began to bleed very early and copiously in combination with the purging plan; and from that time had the felicity to find that the impetuous malady was at length really brought under the power of medical science. In thirteen successfully-treated cases, the sum total of blood abstracted was about 494 ounces; which makes the average quantity for each case 38 ounces. The smallest quantity of blood drawn in any of those cases was 14 and the largest about 70 ounces†. But as the author has concisely stated his method of treatment, we shall make no apology for transcribing it here.

"When I was called at an early period, I seldom took away less than twenty-four ounces of blood at first; unless some peculiar delicacy of constitution (as in the 17th Case), or an excess of the previous evacuations, forbade it. And if the delay was protracted

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* There are besides four additional cases reported in an Appedix.

† *Cases.*	1*st bleeding.*	2*d.*	3*d.*	4*th.*	*Sum total.*
XII.	16$\frac{3}{3}$	4	---	---	20$\frac{3}{3}$
XIV.	1	30	---	and 8 leeches	35
XVI.	30	---	---	---	30
XVII.	14	---	---	---	14
XVIII.	three bleedings to the amount in all of				36
XIX.	16	5	16	---	37
XX.	30	10	11	15 and several leeches	70
XXI.	40	8	---	---	48
XXII.	24	12	---	---	36
XXIII.	14	25	---	---	39
XXIV.	52	---	---	---	52
XXV.	33	20	---	---	53
XXVI.	24	---	---	---	24

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to eight or ten hours, or the symptoms were unusually severe, a larger quantity, to the extent of thirty, forty, and in one instance more than fifty ounces, in proportion to the urgency of the symptoms, and the loss of time.

" If the pain and soreness of the abdomen are not removed, or very materially alleviated, in six hours the bleeding ought to be repeated; nor should a considerable degree of faintness, or even a deliquium, make us suppose, that further bleeding is either unsafe or unnecessary. In short, I know not from any experience of my own, that scarcely any other limit should be put to the quantity of blood, than the removal, or considerable diminution of the pain; provided all that is requisite be drawn within twelve hours of the first evacuation.

" If the disease is clearly ascertained, no other consideration is of much importance. The state of the pulse affords little information, either as to the propriety of bleeding, or the quantity of blood proper to be taken away; and if we are deterred either by the apparent weakness of the patient, by the feebleness and frequency of the pulse, or by any other symptom, from bleeding copiously, we shall generally fail to cure the disease.

" Immediately after the bleeding, the most speedy and effectual means should be adopted for opening the bowels. I usually gave half a dram of jalap, and three or four grains of calomel, in a bolus; and directed that after a short interval, three table spoonfuls of the cathartic solution should be taken every hour or two, till copious evacuations should be procured. This method seldom failed quickly to excite a diarrhœa; and the solution, which is a good febrifuge, was afterwards continued in such quantity, as might produce an evacuation once in three or four hours. The purging was maintained for two or three days, or longer if necessary; and when the symptoms had entirely subsided, it was suffered gradually to decrease. If the bowels were costive, an injection was often attended with good effect, as it quickly evacuated the contents of the large intestines, and expedited the operation of the purgatives.

" I entirely coincide in opinion with Dr. Gordon, when he says, that 'the purging is to be early excited, and to be continued without intermission till there be a complete termination of the disease.' But I can scarcely reconcile this advice with the account of his practice, as before quoted: 'Every night I administered an opiate, in order to give a respite to nature, and strength to the patient, to enable her to bear the evacuations, which she must necessarily undergo the ensuing day.'

" I frequently tried opiates in this epidemic, but, I think, never with advantage. The respite which they afforded was but an insidious truce; and rather tended to prolong the disease."

Mr. Hey informs us, that before the plan of bleeding was adopted, of fourteen patients attacked with the fever, only three recovered; and that after an impressive case, which determined him to use venesection, in addition to purging, of thirty-three patients, which he attended, only three died; the

last twenty-six having recovered in uninterrupted succession, in all of which copious bleeding was employed, excepting in one case of so slight a nature, as to require nothing but purgative medicines.

The great success of this very decided treatment will undoubtedly have its due influence upon the medical public, particularly as it not only confirms the opinions and practices of some preceding authors, but also exposes the folly and futility of trusting to mild or temporizing measures. The disease, in its most severe forms, is alarmingly rapid; and we feel assured, that nothing but the opportune as well as vigorous employment of the láncet, with purgatives, can be at all adequate, in such cases, to check its advancement. So deeply impressed is this sentiment upon our minds, that highly as we approve and applaud the practical part of Mr. Hey's Treatise, we are constrained to confess, that he appears to us, upon the whole, to have recommended too small doses of laxatives. We are quite aware, that he may appeal to the detail of his cases, and rest his refutation of this our assertion on their favourable issue. But in the course of our experience, with very few exceptions, we have observed the bowels unusually torpid in the Puerperal Fever; and when we have given purgatives, similar in kind and quantity to those mentioned in his excellent essay, we have not unfrequently been disappointed in their effect, even when bloodletting had been carried to a greater extent than in any of the cases which he has reported. Indeed we have known 90 ounces of blood taken away, in about fourteen hours, without relief of symptoms, when the repeated small doses of the cathartics exhibited did not purge; and in other instances, to appearance as desperate, we have seen a much less abstraction of blood efficient, when larger doses of the same purgatives acted with freedom and frequency. From these facts we cannot refrain from declaring, that it is generally safer and better to give tolerably full doses of cathartics at once, repeating them at moderate intervals with occasional enemata, until proper effects be produced.

Neither do our ideas exactly accord with those of Mr. Hey with respect to the use of opium in this disorder. In the beginning, when the inflammatory symptoms are intense, its administration we conceive would in general be prejudicial; but when the disease is verging upon the last stage we have certainly seen opiates, in the form of injection or pill, sometimes beneficial. At that period of the complaint, there is often a state of extreme irritation, which anodynes alleviate or allay, and thus occasionally enable the system to renovate, when the abdominal inflammation has not disorganized any vital texture.

Our ingenious author has slightly noticed, in his preface,

Dr. Brenan's tracts on the Puerperal Fever, in which the internal and external use of turpentine is recommended. And properly observes, that he "should not think himself justified in substituting a method of treatment which has not yet been sanctioned by extensive experience for one, which, when properly used, *he has hitherto found infallible.*" But still we apprehend, that Dr. Brenan's favourite medicine is actually deserving of consideration; not that we think it would be prudent to administer it at the commencement of the Puerperal Fever, but towards the last stage, when a purgative is required, at once to stimulate the intestines and the system at large, might not the spirit of turpentine be a suitable remedy? We merely put the question, with the hope that some of our experienced readers may be able to answer it at some future period.

It will be perceived, from the last quotation, that Mr. Hey seems to consider the depletory method as almost *infallible.* And certainly, if we except Dr. Armstrong and Mr. Gregson, no practitioner has been more fortunate. But notwithstanding the great success of all these gentlemen, we have seen enough of the Puerperal Fever to be satisfied, that it will sometimes baffle the best-regulated treatment, and therefore we strongly advise practitioners always to be most circumspect in their prognosis.

We are almost afraid that we may have been already considered as too prolix; but the practical importance of the subject must plead our excuse. In examining the fourth and last chapter, however, we shall endeavour to be as brief as possible, not only because it is the least interesting, but because it is partly a repetition of some remarks in the preceding sections. And, indeed, to speak candidly, the author might have curtailed this as well as many other parts of the volume, with considerable advantage. After a review of the opinions of various writers, respecting the nature, treatment, and seat of the Puerperal Fever, Mr. Hey delivers his own pathological sentiments, in the following passage:—

"It is not in my power to throw any light on this subject from actual dissection; nor, indeed, does an examination of the body after death shew decidedly which was the first part attacked by the disease. For, wherever the inflammation begins, it rapidly extends to all the contents of the abdomen; so that, when it has proved fatal, no peculiar appearance may be found, which shall certainly distinguish the part primarily affected. But in the epidemic Puerperal Fever at Leeds, it was more clearly demonstrated, than it could have been by dissection, that the disease generally originated in the uterus. For that viscus was often considerably enlarged, and shewed an exquisite sensibility upon pressure, while the rest of the abdo-

men remained perfectly free from pain or soreness. And although the pain was not always referred, in the beginning, to the region of the uterus; but in one instance to the pit of the stomach, and in others, to different parts of the abdomen; yet this affords no proof, that the inflammation did not originate in the uterus; for sympathetic affections of the same kind are well known to exist in the strangulated hernia, where there can be no dispute about the original seat of the disorder.

"Upon the whole, then, we may conclude, from what has now been remarked, and from various well authenticated dissections, that a genuine Puerperal Fever may arise from an inflammation of the uterus, as well as from inflammation in other parts of the abdomen; and that a variety in the part which is primarily affected, does not essentially affect the character of the Fever."

The numerous dissections which are upon record appear to us satisfactorily to prove, that the Puerperal Fever is always combined with an inflammation of the abdomen, which is either the immediate or the remote cause of death. But we acknowledge ourselves to be incompetent to determine, whether that inflammation is the occasion, or the consequence of the fever; nor is this of any practical import, since the object of treatment is clearly to remove that inflammation as soon as possible, whenever it occurs, and from whatever cause it may proceed. From our own experience, we can have no doubt that the inflammation sometimes commences in the uterus; and think that guarding against irritation of that organ during and after delivery is a point of more consequence than has been commonly imagined as a preventive of the disease. At the same time we are disposed to believe, that the peritoneal covering is the part most frequently affected in the first instance, and to this conclusion we have been led, by observation made at the bedside, connected with anatomical investigations after death.

The author is undecided whether the disease was actually contagious; but we wish that he had paid more minute attention to this point, as contagion is a subject that has rarely been discussed in a philosophical manner. Some strong facts have certainly come to our own, and to the knowledge of some of our friends, which have inclined us to suppose, that the Puerperal Fever, strictly so called, originates in infection: and this is still more strongly confirmed by the experience of Mr. Gaitskell, and others, as detailed in the last Number of the *Repository*. Yet we are free to confess, that we know men of considerable practice who hold a contrary opinion. At all events, until we are further enlightened on this part of the subject, practitioners in midwifery ought to conduct themselves with the greatest circumspection, whenever they attend any cases of the Puerperal Fever.

We have examined Mr. Hey's treatise freely, only because we were sensible of its importance, and we can conscientiously

recommend it as a work of real practical value, at once creditable to himself and useful to the profession. The depletory practice, by bleeding and purging, is daily gaining ground; and we are confident, that it only wants to be generally and properly tried in the Puerperal Fever, to meet with the preference and adoption which it so justly merits.

II.

A Second Essay on Hydrocephalus Acutus, or Dropsy in the Brain. By J. Cheyne, M.D. F.R.S.E. M.R.I.A. Professor of the Practice of Physic in the School of Surgery in Ireland, &c. &c. 8vo. pp. 74. Dublin. Gilbert and Hodges.

The first Essay of Dr. Cheyne appeared before our labours commenced; but our review of Dr. Smyth's work on this subject, and various opinions we have been led to advance at different times in the *Repository*, have put our readers in full possession of our sentiments, both with regard to the nature and the treatment of dropsy in the brain.

The principal object of the present Essay, is to support, by the practical information which the author has been enabled to collect since the publication of his first work, the opinion which he then advanced; that a great majority of the cases of hydrocephalus arise after, and are dependent on disorders of the abdominal viscera. This opinion has been confirmed by the experience of other practitioners, whose testimony our author has brought forward on the present occasion; and we lament to observe that it has obtained additional support by cases in his own family.

Dr. Cheyne very properly comments on the opinion of Dr. Parr, of Exeter, who asserts, "that he can see no means of accounting for the symptoms of hydrocephalus, but from supposing an original defect in the organization of some parts of the brain itself;" and has clearly proved that the allegations of the learned Doctor, that anatomists have been very superficial in their examinations of the brain in fatal cases of hydrocephalus, are by no means founded in fact. We were particularly pleased with the concluding observations on the above, and another assertion of Dr. Parr, equally inconsiderate.

"If we consider that the brain may perform all its functions for many years before it becomes a prey to hydrocephalus, and even that the formation of the disease may be owing to accident or mismanagement, Dr. Parr's assertion will appear equally improbable as it is unfounded. But I feel more anxious to protest against another of his opinions, although casually introduced; namely, that hydro-

cephalus is incurable under any plan of treatment; because, while it must obstruct the progress of inquiry and improvement, it is calculated for pretty general reception, as it will probably be adopted, as an apology for their indifference, by all who are without inclination for the study of their profession.

"Every disease whose natural tendency is to destroy a vital organ, becomes, in unskilful hands, an incurable disease. Thus, for example, croup may be considered incurable. There are large districts in the eastern and northern coasts of Ireland, in which, I understand, every child perishes who is severely attacked with croup. When we dally with that disease in the first stage, not one in twenty will recover; whereas, if the treatment in the first stage be judicious, there will not be one death in twenty, nor perhaps in a hundred. It is not long since physicians were more ignorant of the nature of croup than they are now of hydrocephalus. The day is perhaps not distant, when, better understanding the nature and import of its early symptoms, hydrocephalus also may lose much of its danger. Some progress has already been made."—p. 12, 13.

Even in cases where the disease is apparently hereditary, we subscribe, from the conviction of experience, to the opinion of our author, that much may be done by attending to the very early symptoms, correcting every disorder in the natural functions, relieving morbid determinations, and instituting new actions in the system. The following remarkable illustration is extremely satisfactory on this point.

"In ———, ten children of the same parents died of water in the brain; in the eleventh and last, by the advice of an eminent surgeon, lately deceased, an issue was established. This child grew up, and became the mother of fifteen children. Seven of these children, in whom issues were not made, died, with all the symptoms of hydrocephalus. Eight children were alive in 1814; in six of these, issues were made at an early age, and in one of the others, at the time I received my information, an issue was resolved upon, in consequence of a threatening of hydrocephalus."—p. 14.

With regard to the use of cathartics after the symptoms of the disease are unequivocally established, various practitioners had employed them occasionally for the removal of precursory symptoms: their effects had also been stated in the works of Dr. Macbride, on the authority of Dr. Halliday of Belfast; and they had been recommended by Quin, with the view of removing plethora; but they had not been recommended, in a free state of the bowels, for relieving irritation of the abdominal viscera, and restoring their natural secretions, by which the diseased action in the brain is also relieved, before the publication of Dr. Cheyne's opinions; and therefore he justly conceives that he has "contributed towards fixing the practice in the early part of the disease."

With regard to the method of treatment, our author first describes that which ought to be adopted when there is reason to apprehend the formation of hydrocephalus.

" The state of the hypochondria, the nature of the stools, and the other excretions, the appearance of the tongue, and the smell of the breath, ought to be examined with care. If the patient wince when the right hypochondrium is pressed, leeches ought to be applied to it, or the margin of the ribs may be cupped and scarified; if there be much pyrexia with head-ach, blood must be drawn from a vein or from the temporal artery. Then cathartics are to be given, to promote and, if necessary, to alter the secretions: generally calomel, with small doses of some common purge of an active kind, as rhubarb, jalap, or scammony; and if there be a sickly smell of the breath, and fullness and uneasiness at the pit of the stomach, an irritation of the mucous membrane of the intestines is denoted, which is sometimes relieved by mild antimonials; these consequently are to be added to the cathartics; squill may also be exhibited with the same view, more especially when the urine is deficient. If the stools be dark-green and glairy, most probably the common cathartics will have little effect, indeed we cannot expect that they will change the nature or appearance of the secretion, which issues from an organ, over which they have little controul.

" Even calomel, the medicine from which most might be expected, is sometimes inert as a purgative, and has no influence over the system as a mercurial, and this seems to arise from want of suitable preparation. In the cases in which hydrocephalus seems most remarkably to have its source in a disorder of the abdominal viscera, and in which the cure is to be effected by exciting these organs to free secretion, we are generally unable, after the first day or two, to effect that purpose by direct means.

" It is a well known law in pathology, that if a gland be excited beyond a certain point, it is no longer able to perform its secerning function, and when so circumstanced, a stimulus applied to it, instead of restoring secretion, often increases the vascular excitement upon which its interruption depends. In hydrocephalus, the biliary secretion is generally languid as well as vitiated, and the presumption is strong, that this condition of the bile depends upon the general vascular excitement of the liver. If the viscera of the abdomen, and particularly the liver, are in a state of high irritation, this irritation ought to be allayed before the stimulus which increases their secretions can be employed with advantage, or even with safety. The true practice is, in the first place to reduce arterial action by venesection, or by topical bleeding and blistering, and then to restore the secerning function of the viscera by means of calomel and other cathartics."—pp. 19, 20, 21.

Several authorities are quoted to shew the beneficial effects of reducing the vascular action, by bleeding, before the exhibition of mercury; but this, our author correctly observes, is sometimes " contra-indicated by the diathesis of the patient, and

by many of the symptoms of the disease." Hence a remedy was to be found "which, while it reduces vascular action, has a tendency to promote the secretions of the stomach and liver;" effects which Dr. Cheyne conceives may be in a great degree obtained from the milder antimonials: and, in order to encourage the trial of these in hydrocephalus, details the following anecdote of the origin of a practice peculiar to Dublin.

"A respectable clergyman who resides within a few miles of Dublin, had been so unfortunate as to lose three or four of his children of water in the brain. He observed that the physicians endeavoured to bring on a perspiration, but always without effect, and he determined, should the complaint seize any other of his children, to take the management of the case into his own hands. The opportunity was soon afforded by the illness of one of his daughters, and the remedy he used was James's powder. This medicine had a great effect upon the child, who, though she had all the symptoms which attended the attack of the disease in the fatal cases, recovered. He gave the child a large dose of James's powder at bed-time, this was repeated every night, and, on alternate nights, as much rhubarb was added as was sufficient to move her bowels. This remedy, it is alledged, has been successful in a number of cases of hydrocephalus which have occurred since."—pp. 26, 27.

As, however, might be reasonably expected, this remedy, even after venesection, when combined with calomel, may often fail of producing the desired effect. When, therefore, the head is not relieved, and the dark-green, gelatinous, glary stools, "resembling boiled laver," peculiarly characteristic of hydrocephalus, remain unchanged by the use of purgatives, and the other means already described, our author recommends the exhibition of opium in very small doses, combined with mild mercurials, as hydrargyrum cum creta, and antimonials, a practice which was suggested to him by accident. By this plan the irritability of the bowels is allayed, without their peristaltic movements being impeded; and the specific effect of the mercurials, in restoring the healthy action of the secerning vessels, is much promoted.

In a disease, such as hydrocephalus is, in which the prognosis is always uncertain, the palliation of distressing symptoms becomes an object of great importance. On this part of his subject, Dr. Cheyne advises blood-letting, either local or general, as, independent of its utility in the event of a cure being practicable, he is convinced "that patients who die of organic diseases of the brain, struggle, and suffer much more when they are not blooded than they would do otherwise." (p. 36.) Shaving the head, and sponging it with cold water and vinegar, with the application of ice, tied up in a thin bladder, to the

vertex, he regards as preferable remedies to blisters for relieving pain. In the convulsions which attend the last stage of the disease, he prefers the aspersion of the face and neck with cold water, to the use of the warm bath; or if this be employed, the dashing cold water upon the head and upper part of the body, while the patient is in the bath; "by which means," he says, "I have seen the fit instantaneously removed:" and he adds in a note, "I have been told, that by burning a tobacco-leaf, or smoaking a pipe near the patient, the fit may be stopt." (p. 37.) Glysters, repeatedly exhibited, often succeed wonderfully in allaying restlessness, which not unusually "arises from the irritating nature of the fæces in the large intestines:" and, from what has been already stated, it is evident that the same beneficial effect will result from the judicious exhibition of opium.

Three cases are detailed; two of which terminated in death, and the third in recovery. They are chiefly remarkable for the character of truth which they display; and are evidently copied, as the Doctor states, unaltered, from the case book. The observations on them, which follow, are extremely important. In all, opium was given with advantage; for even in the first case, in which its exhibition was delayed until the patient was in the third stage of the disease, we are informed

"The convulsions were kept off, the strabismus was less observable, the pulse, I thought, became fuller, and the operation of the other remedies was not interrupted."—p. 59.

In all these cases there was every reason for concluding that the disease of the brain was secondary. The first began "as a remittent fever, accompanied with great disorder of the bowels:" and in the second, after a fever, to which the patient had been subject, the bowels "fell into great disorder, which continued two months before the head became permanently affected." As our limits will not permit us to quote the entire case, we shall extract the observations on the more prominent symptoms, and the appearances on dissection. The ventricles contained three ounces of fluid.

"Notwithstanding the vigorous practice of the first week," (purging, and both local and general bleeding,) "which probably conduced to the mildness of the subsequent part of the disease, there remained on the 18th manifest proofs of inflammation of the liver.

"On the 18th the disease of the brain was in an advanced stage, and the patients strength was reduced; general blood-letting was not thought expedient; emptying the vessels in the neighbourhood of the liver gave great relief; we agreed to combine opium with James's powder and calomel, expecting thereby to increase the powers of the latter, but we were without any very sanguine hope of removing the disease. On the 17th the stools were mucous;

after the 18th they were fœculent, and there was no irritation in the bowels, nor screaming; there were no convulsions. The animal functions, especially on the 23rd and 24th, were scarcely disturbed. In short, the medicines completely fulfilled the expectations with which we had prescribed them: while the liver yielded a more healthy bile, the perspiration from the head and neck was prodigious, such as I had never witnessed, and the urine began to flow, soon after the first dose of the foxglove. The constitution made a surprising rally, indeed it did every thing short of throwing off the disease: for two days the excretions bore a strong resemblance to those which generally attend a favourable and complete crisis.

"With respect to the dissection, there was nothing remarkable in the brain. The brain is often firm, even when that part of it, which forms the parietes of the ventricles, is pulpy, and it is not uncommon to find coagulable lymph about the base of the brain. The liver was connected with the peritoneum, by one of the most extensive bands of coagulable lymph I ever saw formed by inflammation, yet there was little appearance of disease in the substance of the liver; seemingly it had recovered from the inflammation, which certainly did exist in the early part of the complaint. This I believe is often the case, the liver is relieved, while the organs which it draws into disease are destroyed."—pp. 61, 62.

The recovery of the third case was the more remarkable, as the child was probably predisposed to hydrocephalus, "two of his cousins, by the father's side, having died of that disease." In this instance, also, the chylopoetic viscera were disordered long before the brain became affected.

"The state of the abdominal viscera," says our author, "was our first and principal care. The liver could be felt enlarged and tender; it seemed probable that the mesenteric glands were also enlarged, as the mouths of the absorbents which pass through them had long been acting upon an imperfectly concocted mass. Our objects were to promote and improve the secretions of the liver, and to counteract the irritation produced by a morbid state of the bile, upon the alimentary canal, and the system of the lacteal absorbents.

"We began with but a small quantity of opium lest it should interfere too much with the peristaltic movement of the bowels. The discharge from the bowels not being checked, but, on the contrary, becoming more free, and the general irritability of the system being great, the quantity of the opium was increased to two grains in twenty-four hours; after which the quality of the discharge from the bowels was improved, and the child became calm though the disease was unsubdued.

"Nothing is more encouraging in hydrocephalus, than to find an increase of the excretions: the state of the urine on the 25th afforded a dawning of hope: on that night the restlessness returned, and the quantity of opium was further increased. On the 26th the pupils were contracted, and the next day it struck us that the great contraction of the pupils was owing to the opium; it was therefore

gradually diminished, and we began to perceive we were gaining ground. The secerning function of the liver being restored, its swelling subsided, the symptoms of diseased brain and pyrexia gradually disappeared. On the 31st we considered the specific disease of the brain as terminated."—p. 64, 65.

To these extracts we shall only add the following, which we regard, as containing a conclusive reply to the objections advanced against that view of the disease, which, in common with our author, we have adopted.

" It has been alleged that the disorder of the abdominal viscera, which occurs in so great a majority of the cases of hydrocephalus, although it may seem to take the lead, is in fact subordinate—is but a symptom of disease of the brain which has not yet displayed itself. I shall not call this opinion in question, provided it be admitted, that the most effectual way of preventing the developement of hydrocephalus, is, by correcting this subordinate affection of the abdominal viscera. If, in hydrocephalus, the first of the series of diseased actions is in the liver, we may hope, by early subduing the increased vascular action of that organ, and by improving the biliary secretion, to relieve the patient, provided the disease in the brain has not gone too far: unless the brain admits of being relieved through the medium of the abdominal viscera, hydrocephalus, I apprehend, will still continue a reproach to medicine, as it was in the days of Whytt and Fothergil."

With regard to the execution of the literary part of this Essay, our desire to see the style of medical writings keep pace with the advancement towards correctness and taste in composition, obliges us to say that it is not altogether free from faults; but it is written in a plain, unaffected style, which conveys with perspicuity the ideas of the author.

III.

A Practical Explanation of Cancer in the Female Breast, with the Method of Cure, and Cases of Illustration. By John Rodman, M. D. one of the Surgeons and Medical Superintendants of the House of Recovery, Paisley. 8vo. pp. 240. Underwood. London. Paisley, printed, 1815.

The subject here chosen by Dr. Rodman is of sufficient importance to demand a minute analysis of his " practical explanation;" and such an analysis we should have given, had not the irregularity of its structure and composition rendered that impracticable. The design, as far as we comprehend it, is to shew, that Cancer of the female breast, or its cause, is of

a local nature; that the disease arises from cold, or is aggravated by a low temperature, by mental perturbation, and by dyspepsia; and that extirpation of the mamma is less frequently required than has been generally supposed.

"During a course of considerable practice," says Dr. Rodman, "having preserved a journal of cases and observations, this treatise is a composition selected from those, in obedience to the *London Society**, which was instituted for investigating the cause of *Cancer*." It appears that this society promulgated a number of queries, on the nature, cause, symptoms, and cure of Cancer. Some of these are stated in the preface, and the author professes to answer them in the body of the work. Our first idea was, that by re-printing those queries, and selecting the answers to them, as contained in the pages of this pamphlet, referred to by the author as containing those answers, we should have been able clearly enough to shew our readers the nature and tendency of Dr. Rodman's views, give a distinct illustration of the causes and phenomena of carcenoma as he would develope them, and comprehend the practical precepts of this "practical explanation." The answer to the first query determined us against this plan, and reduced us to the necessity of selecting some of the prominent points only, especially such as bear most strongly on the practice.

The "influence of cold," as productive of Cancer, or as aggravating the symptoms of that complaint in the female breast, is the subject of the fifth chapter. From some general observa-

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* The society here named "The London Society for investigating the Cause of Cancer," never, we believe, had an existence under that title; it refers, we apprehend to an Institution in London, formed in 1801, for the express purpose of investigating the nature of *Cancer*, and of making experiments, for the discovery of a method of curing that disease. This Institution arose at the suggestion, and under the auspices of several respectable physicians. Mr. John Pearson was surgeon to this Institution; and it was chiefly under his care and direction. The principal physicians and surgeons of the metropolis were invited to give their assistance, and to suggest means by which the ends of the Institution were likely to be most effectually answered. This Cancer Institution was carried on with spirit for about two years, and was then dissolved, with the future view of extending its sphere of action, by some establishment free from its inconveniences. We are sorry to add, that this laudable project has not yet been executed. We believe the queries distributed among the faculty by this society, were more numerous than Dr. Rodman makes them: they were drawn up with much judgment by Mr. Pearson, and an expectation was formed, that the answers to them would elucidate the cause and nature of Cancer.

tions intended to shew the effects of cold on debilitated systems, Dr. Rodman proceeds to state, that

"The innate weakness of the sex, the natural indispositions, the secluded manner of life, indeed, all the circumstances belonging to constitution, and connected with situation in society, render females peculiarly liable to those diseasing affections which arise from the occasional exposure to cold. But in order to derive advantage from such views, it may be proper to venture a few observations, first, on some symptoms (when no very active distemper is occasioned) by which it appears that cold *infects* the digestive organs, and next, on other symptoms which shew how cold acts on a part of the body through the medium of the body, and a part itself abstractedly considered. Delicate females are often *infected* by cold when the disease introduced by it can scarcely be arranged in the order of any classification of diseases. Yet its influence in this way does not barely depend upon ordinary degrees of coldness, when the climate is moderate. Its sensible effects are chiefly hurtful on passing into changes from a higher to a lower temperature; and similar effects have sometimes been known to originate in sudden changes from a low to high temperature. Both of these changes affect the constitution, although it is certainly of great importance to observe the particular state of the body at the time, as well as the quantity of heat lost, while it is intended to notice how the variations of heat and cold are injurious."

The feeble nature of the female constitution "being universally admitted," the observations offered here, the author says, are intended to mark the principles on which the danger rests, during the time that females are subjected to the chilling effects of cold. (p. 86.) "When the body is much cooled, either by the action of cold on the trunk, or by the cooling process on the extremities, the sense of chilliness is stronger in the diseased breast than in any sound part. Each chill is felt in its passage, and lodges in the breast with painful sensations. Thus cold seems to introduce *local* disease as certainly, if heat be abstracted by means of a small portion of the body, as by that of a greater. However it does not appear that *disease of the mamma* arises from the abstraction of heat, simply considered, but from the quantity abstracted being more copious, in a given time, than that which is generated; for the gland is disordered whether the female be chilled by the thin covering of the mamma, or the thin covering of the body." (p. 88.) "Every body knows how readily a weed occasions a tumour in the female breast, and none can be ignorant that this circumstance depends upon the action of cold during a peculiar susceptible condition of the body. And when a tumour originates in the breast, in consequence of cold, it need not be difficult to ascertain the augmentation of one in that organ, after the disturbing influence of cold has been repeatedly acting on the part."

(p. 89.) "Cold is one of the most powerful of the remote causes which excites the inflammation and hardens the gland; for it acts, not only upon the vessels of the breast, but it acts also upon all the vascular system. It is in this way that cold rouses the feeling of darting pains, and occasions so much injury to the breast." (p. 90.) "A breast which has been long diseased, renders the vessels around it very tender, and the action of cold disturbs them, causing little tumours to appear as if they were contaminated. From this cause swelled glands arise in the axilla, and the increase of a tumour in the mamma will be so great, by the influence of cold in one night's negligence, that months will sometimes be required to dispel what have, thus, been the diseased production of a few hours." (p. 92.) Similar assertions respecting the action of cold on the female breast, are to be found in various parts of the pamphlet; but we shall cite only one. At p. 24 it is stated, that "females, who are easily agitated, complain very often of uneasy fulness and heat, and painful distention of the mammæ, with uncommon sensibility to the action of external substances, and frequent shooting pains through all the gland. And in this peculiar state *cold acts in a very observable manner, producing swelled lymphatics, or lacteals thickened and tense like small cords, with numbers of bulky or clustered glands dispersed over several parts in the body of the breast;* and it is principally during this *affection from cold* that shooting pains are felt in it, and these glands are swelled." Upon these *dicta* we feel no disposition to comment: having stated them verbatim, we leave our readers to their own conclusions.

Of the aggravation of all diseases by perturbation of mind, and by disordered or imperfect action of the organs of digestion, there is surely no question: of the exacerbation of the symptoms of Cancer, under the mental inquietude which that disease or the apprehension of it produces in an extreme degree, with its constant and concomitant dyspepsia, there is no reason to doubt; and that the removal or abatement of the mental feeling, and the improvement of the digestion, are desirable objects every practitioner will admit. How far, however, in all cases of tumours in the breast, their possible final termination should be concealed from the patient, with the view to keep her mind quiet on the subject of extirpation, becomes a point of serious consideration to the honest surgeon. In the eighth chapter Dr. Rodman professes to consider the opinions for extirpating the mamma.

"There is no part of practice about which less has been satisfactorily established, than the extirpation of the mamma when it contains an induration. A surgeon who amputates the breasts of a great many females, for moveable tumours, of a moderate size, has many

chances to be successful when there is no other danger to fear for some time but the irritation and fever occasioned by the operation. And while he is inclined to extirpate all he meets with, he has little opportunity, from his own experience, to witness how many cures can be affected without the knife, or to know how remedies can be used for that purpose. His opinion, therefore, will be decidedly in favour of amputation. Whereas the surgeon who carefully watches all the circumstances, sees the ruinous consequences of such operations on the female constitution, and observes that the number of diseased females is greater who survive without cutting, will speak according to the dictates of his experience. In this way the opinion of both surgeons may proceed from the most upright intentions; yet the former approving from practice, and disapproving from ignorance, and the latter approving and disapproving from the conviction impressed by observation, while neither of the parties possesses clear or distinct ideas on the subject."

When the author speaks of the extirpation of the "mamma, when it contains an induration, and of the surgeon who amputates the breasts of a great many females for moveable tumours of a moderate size," he surely states the question in a manner to create alarm. The excision of a *moveable tumour* from a breast in other respects healthy, is an operation much less formidable than the term "amputation of the breast" implies. The last sentence in the quotation we are not quite sure we understand; nor can we congratulate Dr. Rodman for clearly stating the evidence for and against the use of the knife. The following paragraph is, at least, as perspicuous as any other in the chapter which considers the "opinions for extirpating the mamma."

"The want of success in removing mammæ for recent tumours, when the prospects were flattering, has deterred many surgeons from performing the operation. And others have been so successful that they have not hesitated, by means of an operation, to arrest the progress of the disease at a very advanced period. The inconsistency of these occurrences has led to a conclusion that the operation is probably the safest practice, provided it can be performed before the gland is poisoned. But what are the indications of this suspected poison? They are feverish symptoms, swelling, pain, confusion of intellect, and urgency of conduct; symptoms pointed out in these writings, which arise from the combined effects of cold, costiveness, and despair. Therefore, as these may come on at any period, from the negligencies of the patient and the temporary dispositions of her mind, they are necessarily uncertain, and can afford no certain criterion for knowing the proper time when an operation should be performed. Hence it is obvious how mistakes have happened, both with respect to the kind of tumours, and the time for operating."

From the concluding chapter, which treats of "the ulcer of the mammary induration, commonly called open Cancer," we

select the following passage for the practical directions which it contains, and as a fair specimen of the most valuable part of the work.

"When a female patient is pale and emaciated, and the ulcerated breast has become very fetid, the fœtor is not to be overcome by ordinary washing, but by the careful use of antiseptic cataplasms. The putrefactive process which is the cause of this fœtor, is promoted by different degrees of bad health. It is also aided by the application of any substance, such as bread-poultices, which has a tendency to corruption. But this may generally be checked by cleansing the sore with tepid infusion of gentian, columba, or chamomile. A poultice of chamomile flowers, when properly stewed and softened, is peculiarly efficacious*. The state of such a patient is greatly improved by drinking a sufficient quantity of port wine, and using a poultice of this kind at the same time. It should be made to surround the breast, and ought to be removed and replaced every six or eight hours till the fœtor is subdued, washing the ulceration at each removal with some of the bitter infusions, by means of a syringe. During this, however, it is necessary to preserve an agreeable degree of bodily warmth, and to keep the bowels in a state of easy openness. A current of air on the body of a patient in such circumstances, will often occasion chills which, although scarcely noticed, are particularly hurtful, and on that account the regular heat of bed is generally preferable. In the course of a few weeks, the continued use of chamomile poultices can, in general, be dispensed with, when they only become now and then necessary. And the design of keeping down the fœtor, and carrying off the irritation, is often accomplished by covering the ulcerated surface in the intervals, when the poultices are laid aside, with some kinds of antiseptic powders, such as cinchona, and several bitter roots, washing the parts as before. It is in this way that chalybeate powders may be employed many times with great advantage. They can be employed in a simple state, or can be mixed so as to answer the purpose of tonics, antiseptics, and absorbents; and by using them in this manner, they become, in particular cases, of far greater service than fatty or oily applications, which, by soon becoming rancid, advance the putrefactive process, and add to the acrimony and fœtor of the matter."

PART III.

SELECTIONS.

Medical Practice of the Natives of India.—The following brief account of the state of medicine, as practised by the na-

* A poultice of chamomile flowers, "when properly stewed and softened, is esteemed to be peculiarly efficacious," and is now the favorite topical application in every form of diseased breast.

tives of India," was drawn up by Mr. Underwood, of the *Native Hospital* at Madras, at the request of the author of the Oriental Memoirs.

" It appears to Europeans that the natives of India are extremely ignorant in the practice of physic; they have many remedies, chiefly roots and herbs, which are generally given in the form of powders. The practitioners are poor men of a particular cast, who sit by the side of the high roads and market paths, with small boxes, containing various kinds of powder, which is administered with particular instructions, and a promise of cure in a specific number of days. In all complaints they enforce abstinences, seldom allowing the patient any other nourishment than their conjee, or rice gruel. In certain diseases they give cinnabar, occasionally with success; but the improper use of it frequently causes ulcerations to spread to a very great extent.

" The natives are extremely bigoted to their own remedies, which, without improvement or alteration, are handed down from father to son through succeeding generations. They therefore seldom apply for the assistance of Europeans until the case appears hopeless from their own prescriptions. They do not bleed, nor perform any surgical operation, unless the removal of a part partially divided. All cases of fractures and dislocations are consigned to the potters, a cast of people abounding in Hindostan, for making the jars and cooking utensils of red clay, so universally used. The potter places the limb of his patient in what he considers the best situation, and then covers the part affected with moist clay; this, when dry, fixes the limb; and under such treatment simple and compound fractures often do well: but, as may be expected from this process, distortions and stiff-joints are more frequently the consequence.

" For spasmodic affections, the natives of India generally apply the juice of the milk-bush to the parts affected, which acts like a blister. In more serious cases they use the actual cautery: from this cause it is common to see horses, oxen, labouring men, especially palanquin-bearers, and porters of heavy burdens, marked in many places by a hot iron. Notwithstanding the liberal mind and singular propensity of the Tanjore sovereign, SURFOGEE, already mentioned, it cannot be expected that these medical practitioners should in general acquire any accurate knowledge of anatomy; and the heat of the climate operates powerfully against their possessing any extensive information from dissection. Much, however, may be acquired from preparations.

" Although I have no high opinion of the general mode of practice among the natives, yet in a few instances I should

give a preference to their remedies, particularly in the opthalmia, or sore-eye, of India. The inflammation frequently runs so high, that the sight is destroyed; unless by some active means the affections so deeply rooted can be removed. This, I think, is best done by an early application of what is called, at Madras, the 'country remedy;' which is a thin paste, made by burning a little alum on a hot iron, and mixing it with lime juice by a spatula into a paste. This is applied over the eyelids, to the extent of the circle of the orbit, at going to rest, and washed off in the morning with a decoction of tamarind leaves. This I consider the best and most certain remedy for a disease that so repeatedly causes blindness; a surprising number of the natives are entirely blind, especially among the poor.

"I have often seen a Mahomedan practitioner perform the operation of removing a cataract. He made a small puncture with the point of a lancet, immediately behind the iris, into which he introduced a particular instrument, so guided as to depress the cataract. This operation I prefer to any other mode yet practised, as it occasions less injury to the eye."—*Forbes' Oriental Memoirs*, vol. iii. p. 429.

PART IV.

FOREIGN MEDICAL SCIENCE AND LITERATURE.

PRACTICE OF MEDICINE AND SURGERY.

I.—Volkers, a German physician, has published the following account of a remarkable disease of the kidney:

"Mr. V. H., forty-four years of age, of a robust and choleric habit, was, in the beginning of 1803, seized with violent pains in his loins, which afterwards spread to the right hip, descended along the thigh to the calf of the leg, and lastly as far as the toes. The attacks were alternately more or less violent; and sometimes ceased for a long while together. In the spring of 1806, the sciatica returned with the greatest violence; and after it was alleviated, the patient retained a sensation, which seemed to him to prognosticate lameness. In the summer of 1808, after a short journey, the pains in the back recurred, and the

patient observed his urine to be tinged with blood, it nevertheless passed off without any inconvenience. The complaint was thought to be hæmorrhoides vesicæ; but the remedies applied to relieve it were of no avail; and the patient discovered that the right side of his belly felt as hard as a stone. The hardness began in the region of the liver; and he soon could not stand upright for a quarter of an hour, without experiencing pains in his groins, which were increased by walking.

" In October 1809, M. Volkers was consulted. A considerable swelling, resembling a steatoma, was perceivable through the abdominal integuments, spreading almost wholly over the right side of the abdomen, and apparently taking its origin from the liver. Above the hip-bone, where it joins the os sacrum, a hard swelling appeared, descending somewhat below the former; and in this place the patient felt great pain. Digestion and nutrition were impeded. A painful bloody micturition now came on, which at intervals was a little easier, but became more violent and painful at every return; and frequently large pieces of clotted blood were, by violent exertions, pressed through the urinary passage. After such an attack, the paroxysms of which at first only lasted for a few hours, but afterwards lengthened into days, the patient sometimes would feel pretty well for a time; while the urine, more or less mixed with blood, was voided without pain; but as soon as the urine assumed a white or straw colour, a new attack commenced, which, in general, was accelerated by great exertion and agitation of mind. The warm season was more beneficial to the complaint than the cold. Since the mictus cruentus had taken place, the patient could only make water at short intervals, and in small quantities; and this evil increased with the increase of the tumour. Sleep began to forsake him; and although his appetite remained good until some months before his death, yet he was obliged to restrain it. His pulse, for the most part, remained regular; only during violent attacks it became a little agitated.

" A stone was supposed to exist in the bladder, but the application of the catheter proved that this opinion was erroneous. The diagnosis was obscure; although it was not difficult to prognosticate that the complaint was incurable; and nothing could be done, but merely to alleviate the sufferings as much as possible.

" Since the 18th of March 1811, the condition of the patient became visibly worse; he lost his appetite entirely; and from the 14th of April until his death he refused every kind of nourishment. His strength decreased more and more; absence of mind, convulsive motions of the fingers, and gnashing of the teeth succeeded, and he expired on the 29th of April.

" *Dissection.*—After the much-extended abdomen had been laid open, the liver was found pushed upwards into the thorax, and pressed towards the left side, but otherwise in a healthy

state. A very large tumour, covered by the liver, extending from the tenth vertebra, with its thinnest part, and increasing in size as it descended, nearly filled up the umbilical region, as far as the pelvis, so that its basis rested upon the internal iliac muscle. The stomach, together with the intestines, were also pushed to the left side; and the latter, by continual pressure, was in most places consolidated in itself, and with the tumour. On the left side of the tumour, in the region of the first and second vertebra, similar adhesions, particularly in the short ribs, had taken place.

" The left kidney was sound, but the right one was apparently missing: it, however, appeared that the arteria renalis dextra passed from the aorta into the tumour, and the vena renalis dextra from the latter into the vena cava descendens: the right kidney of course formed the tumour.

" As to the tumour itself, its exterior form resembled an uterus in the sixth month of pregnancy. On its body a deep impression was discernible, occasioned by the continual pressure of the liver; with various projections and hollows; some of the former resembling ripe abscesses, but which, on being pricked, did not emit any fluid. The body itself of the tumour was of a more rounded form; and the bottom, on which likewise projections and hollows were evident, had, on account of its confined situation in the cavity of the pelvis, a more compressed figure; and only on the outer rim a considerable extension shewed itself. The tumour, particularly in front, and on the sides, was covered with a skin formed of tendons, by means of which it was retained in connexion with the adjacent parts. It felt elastic on the outside, and in many places some fluctuation might be perceived by the touch. On being cut, about 1½ lb. of a watery fluid, tinged with blood, issued.

" In endeavouring to penetrate into the hollow of the tumour, several closely-united layers of ligamentous, tendonous excrescences presented themselves, forming, as it were, its exterior shell. The whole interior substance resembled, in the upper part, a steatoma; but below it had rather the appearance of an organ destroyed by carcinoma. The substantia medularis and corticalis were plainly discernible in the substance of the tumour.

" The weight of this metamorphosed kidney amounted to 12lb.; the length, in its greatest extent, 12½ inches Rhenish measure; the greatest breadth 9 inches; and the greatest thickness 6½ inches. The height of the cervix, taken from the body, 4½ inches, and its breadth 6½ inches."

*** Six years ago, a case of a similar description, in an officer of the army, came under the care of our colleague Mr. Thomson. Twelve years had elapsed from the commencement of the disease to its fatal termination, which occurred a few weeks after he first saw

him. At that time a large pyramidal tumour pointed in the right hypochondrium, which had been mistaken by several eminent physicians for an abscess of the liver; and, under the same impression, Mr. T. proposed to plunge a trocar into it; but this proposal was resisted by the patient. No particular history of the case was kept: but the following is the account of the morbid appearances after death, copied from the notes taken of the dissection.

On opening the abdomen, the first thing which presented itself was a large body resembling the gravid uterus, at an advanced stage of pregnancy, which concealed from view all the intestines, except the colon, the arch of which, passing across the upper part of the tumour, adhered firmly to it. The surface of this body, or tumour, was irregular; but it pointed in a pyramidal form in the right hypochondrium. An irregular ridge also ran in a direction nearly parallel with the cartilages of the short ribs, from the base of the pyramidal tumour rising to the xyphoid: and was the ridge which during the life of the patient had been always regarded as the edge of the supposed diseased lobe of the liver. On passing the hand round, and behind the tumour, it was perceived that it was a diseased kidney; which, after tying the emulgent vessels and separating the colon, was removed from the body.

In situ, the position of the diseased kidney was from within the ribs on the right side, diagonally across the spine, until it rested on the left rim of the pelvis. Upwards, on the left side, it lay upon the spleen; and on the right side, covered by its lower part, the caput cæcum, the vermicular process of which was extremely long and large. The coats of the ureter were much thickened and enlarged; but although the canal was greatly distended for the space of two inches, next the kidney, yet, in the lower part, it was quite impervious. The kidney itself, when removed from the body, weighed fifteen pounds and a quarter. An opening being made into it, about two quarts of bloody serous fluid first escaped, and afterwards a pailful of thick offensive-smelling, curdy matter, which was contained in separate cysts, which were successively opened until the whole of the contents were discharged.

After the kidney was removed from the body, the liver was found to be small in size, and pressed up with the diaphragm into the thorax; but it was perfectly healthy. The bile contained in the gall-bladder was rather of a pale colour. The stomach, small intestines, and bladder were perfectly healthy, as was also the left kidney. The thorax was not examined.

Dr. James Gregory, Professor of the Practice of Medicine in the University of Edinburgh, in answer to a letter from Mr. Thomson, describing the above kidney, at the time the case occurred, writes: "I find in my note-book only one very remarkable instance of enlarged kidneys mentioned: and that one I never saw; but I heard much of it, soon after the case occurred in the Royal Infirmary of this city. That was in August 1776, just six months before I first attended as Clinical Professor. It was a subject of much conversation among the surgeons, several of whom had seen the body opened. The late Mr. Latta (who, I believe, was at that time surgeon's clerk) gave me the particulars. The man was supposed to have got a

physconia, but of what *viscus* could not be discovered. On opening the body, one of the kidneys was found swelled, hard, and weighing *forty pounds* (avoirdupois). The capsula atrabilaria of the same side (the left, to the best of my remembrance) weighed *five pounds*. The whole mass, kidney and glandula renalis, weighed *forty-five pounds*, and filled a common water bucket."

Instances of enlarged kidneys are described by *Boerhaave, Aphor.* 1002; *Morgagni, Ep.* 68, *art.* 12; *Bonetus, vol. ii. p.* 569; and one is noticed by Van Swieten, which weighed *fourteen pounds*, and was a mere bag of pus.

CHEMISTRY.

II.—*Conclusion of Berzelius' Analysis of Lichen Islandicus.*—"Before entering further into the details of this analysis, let us take a slight view of each of the substances contained in the lichen.

"1. *Of the Bitter of the Lichen.*—The last analysis pointed out the method (7) of obtaining the bitter in its pure state. It is pulverulent, light, of a pale yellow colour, and an excessively bitter taste, which remains long on the palate. Heated upon a glass plate, it liquifies in part, becomes yellow, puffs up, fumes, exhales a disagreeable, acid, empyreumatic odour, and leaves a spongy charcoal, the perfect incineration of which is difficult, and a very small quantity of greyish ashes only remains. It is scarcely soluble in water; but its saturated aqueous solution is of a pale greenish colour, and insupportably bitter; evaporated in a gentle heat, the residue is a grey bitter powder, possessing the same properties as before its solution. If this solution be a long time boiled, it becomes brown, a brown powder is precipitated, and the bitter taste disappears.

"The bitter is rather more soluble in alcohol than in water; but nevertheless the former dissolves a small portion only of it. The alcoholic solution is yellowish green; and, after evaporation, leaves the bitter principle in the form of a powder resembling the pollen of certain plants. The alkaline carbonates in solution are its best solvent. The solution is green, and extremely bitter; but by ebullition the bitter is destroyed. On saturating the alkali with an acid, the muriatic or acetic for example, the bitter is precipitated in the form of a white powder resembling alumina precipitated from alum by caustic ammonia. An excess of acid dissolves this precipitate. The acetate of lead, with an excess of base, throws down, from an aqueous solution of the bitter, a bright grey powder; nitrate of mercury at a minimum produces a white mucilaginous precipitate. The salts of iron occasion no change, provided the bitter employed for making the solution have been well washed; for if that be not the case, the adhering gallic acid will produce a purple precipitate.

" Infusion of lichen islandicus, even when kept in a cold place, enters by degrees into spontaneous fermentation, is covered with a white pelicle, contracts a peculiar odour, and the bitter taste is completely destroyed.

" 2. *Of the Acids and Salts contained in Lichen Islandicus.*—The infusion of the lichen reddens litmus paper, owing to its containing acidulous tartrate of potass. It contains also tartrate and phosphate of lime; but neither muriate nor sulphate of potass.

" Ten grammes of dried lichen being burnt, yielded 0^{g}·11 of greyish white ashes, from which water dissolved an almost inappreciable quantity of free alkali; but no other traces of saline matter were perceptible. After the alkali of the lixivium was neutralized with nitric acid, nitrate of silver did not produce the slightest turbidness in it. Muriatic acid, poured upon the portion of the ashes insoluble in water, dissolved them with effervescence, leaving, as residue, a little grey-coloured silex. Ammonia, poured into this solution, produced a white precipitate, which became yellow on exposure to the air, like the precipitate procured from a solution of phosphate of ferruginous lime. All the tests, also, to which I submitted it, convinced me that it was phosphate of lime mixed with iron. Lime formed the greater part of these ashes. I precipitated it from the muriatic solution by salt of sorrel.

" 3. *Of the Extract and the Gum of the Lichen.*—Chemists have not yet accurately characterised extract; but have ranked under it so many heterogeneous substances, that no accurate idea can be attached to the term. One of the most common properties of *extract*, is, that it separates from its solution by evaporation in contact with the air, under the form of a brown, nearly insoluble, powder. This was the property of the substance I have described under the name of extract; but the two substances of this kind which I obtained in my two analyses differ so much, that they cannot be arranged under the same denomination.

" In the first analysis, I obtained, by means of liquor of potass, a brown colouring substance, soluble in water, and forming with it a deep-brown opaque solution. In the second, in which alcohol was employed at first, I obtained, by means of the same alkaline solution, a much lighter brown substance, which, after I had saturated the alkali with acetic acid and washed the salt with alcohol, became elastic like caoutchouc, and in this state was scarcely soluble, either in liquor of potass or in water.

" When strongly heated, it swelled up, and exhaled a vegetable empyreumatic odour. In look it resembled, in some degree, coagulated white of egg; but it is not, like albumen,

soluble in acetic, nor precipitated, like it, by the mineral acids; nor, when exposed to a high temperature, does it, like albumen, exhale an animal odour. Acetate of lead, with an excess of base, added to an aqueous solution of this substance, throws down a dirty-yellow precipitate; while no effect is produced by sulphate of iron and of copper; but on adding a little alkali to the aqueous solution which already contained sulphate of iron, a bottle-green precipitate, unalterable in the air, was produced. As these two substances, so heterogeneous, were obtained in both analyses, and in the same proportions, there can be little doubt that they arise from the same constituent part of the lichen, differently modified by the agents employed in the analyses. That constituent is the colouring part; and it is the mutability of the colouring principle that permits us to produce so many different shades in employing the same colouring principle, only by varying the mordants.

" 4. *Of the constituent part of the Lichen soluble only in boiling water.*—This is the most remarkable substance contained in the lichen. *Proust* compares it to gum; *Westring* calls it gelatinous matter, and, for what reason I know not, compares it to the gelatine of hartshorn, to which it has no affinity except that of forming a jelly by cooling.

" In our experiments, we have seen that this substance is dissolved when the lichen is boiled with water; and the fluid which passes the filter, forms, in cooling, an opaque jelly, generally of a brown colour, owing to the extract which is united with it. But if the lichen be carefully washed, it may be obtained nearly colourless. This substance is so coagulable, that the part dissolved soon separates, like a continuous mass, which afterwards contracts, separating nearly altogether from its water of solution; removing the coagulated mass upon the filter, the greatest part of the fluid drains off, and the gelatine contracts more and more. The phenomena, presented by a solution of animal gelatine in coagulating, are different: it thickens like melted fat, and does not allow the fluid to escape: the gelatine of the lichen, on the contrary, coagulates like turned milk; the fluid which drains off contains a substance resembling serum, and a little gum. The coagulum is more soluble in warm water than in cold.

" The coagulum is nearly insipid, and mucilaginous upon the tongue; it leaves a slight bitter upon the palate, analogous to the odour which exhales during the boiling of the lichen, and which is not unpleasant. It dries slowly, and after desiccation it forms a black mass, hard as bone, and having a vitreous fracture; this dry mass softens and swells up in cold water, while in boiling water it dissolves and forms a coagulable jelly. In this

case the colouring matter is not re-dissolved, and the gelatine, a second time coagulated, is perfectly white, but opaque. On evaporating the fluid which separates from this second coagulation, very little residue is obtained; hence cold water must retain in solution a very small quantity of the gelatine.

" To examine more narrowly this substance, I distilled three grammes of it by means of a pneumatic apparatus, and collected in the receiver an acid fluid of a very disagreeable odour; and floating on it some drops of a thick brown oil. Both together weighed $2^{s}\cdot95$. Saturating the acid with calcined lime, I did not discover the smallest trace of ammonia. One gramme of spongy shining charcoal remained in the retort, of easy incineration, leaving $0^{s}\cdot15$ of grey ashes which contained no alkali; but in which I discovered, by means of re-agents, some carbonate and phosphate of lime, a little oxide of iron, and a little silex. During the distillation, 27½ cubic decimetres of gas were disengaged, which was a mixture of carbonic acid gas, gas of oxide of carbon, and a small quantity of carburetted hydrogen gas. The gas, as well as the water of the trough, had a strong empyreumatic odour of oil; this gas and oil, or vapour, made up the $1^{s}\cdot07$ of loss.

" What has been said, clearly proves, that this jelly has not the least analogy with animal matter; and as it furnishes no ammonia by distillation, it therefore contains no azote. The great quantity of acid proves, that it contains a great proportion of oxygen compared to that of its hydrogen and carbon.

" On evaporating or boiling a solution of this jelly, a pelicle forms on its surface, which contracts by degrees, forming a dry firm skin, which renders it very difficult, even in boiling the liquid, to concentrate a weak solution by evaporation. This skin softens in cold water and becomes adhesive; in boiling water it dissolves, but this solution coagulates only in part, the remainder remaining soft like a solution of sago or starch; hence our jelly, in forming a pelicle in contact with air, becomes more soluble in cold water. In many of my experiments I observed, that by employing a great quantity of water for the decoction of lichen, less jelly was obtained, because its coagulability is diminished by the formation of the pelicles during the evaporation.

" Adding a little concentrated sulphuric acid to a warm concentrated solution of jelly, it suffers no alteration, and even coagulates in cooling.

" At a moderate temperature the dried jelly dissolves easily in nitric acid; but by the action of this acid it loses all its viscidity, and a brown powder, which long resists the action of the acid, remains at the bottom of the vessel. By elevating

the temperature, the nitric acid is decomposed with the usual phenomena; by interrupting the process, at any period, a small quantity of saccholactic acid is always obtained. The greater proportion of the gelatine is decomposed; and at the close a little oxalic acid is formed which is not browned by continuing the evaporation, as is the case with that obtained from sugar. This result proves that the gelatinous part of the lichen is neither of the nature of gum nor mucilage, but approximates to that of fecula.

" Passing a current of oxymuriatic gas through a solution of this gelatine, it loses any colour it originally had, but suffers no other change; it coagulates as before, and yields with tannin a precipitate of the same kind as before being exposed to the action of the gas.

" Liquor of carbonate of potass produces no other alteration on the gelatine than pure water. Caustic potass dissolves it even in the cold, and forms with it a very liquid pale yellow solution, which is not precipitated by acids.

" The greater part of these results rendered the identity of gelatine with fecula so probable, that I resolved to push the comparison to its utmost.

" By its manner of dissolving in water, the gelatine of the lichen closely resembles sago, which we know is a variety of fecula; which, in the process for its extraction, loses the form of crystalline powder under which Nature usually produces fecula. Having prepared equally concentrated solutions of the gelatine of the lichen, of sago, and of starch, and as the first could be obtained only at a temperature requisite for its concentration, I employed all three at a temperature of 50°.

" *(a.)* Nitrate of mercury at a minimum produced in all the solutions a light white precipitate, which scarcely disturbed their transparency.

" *(b.)* Acetate of lead, with an excess of base, produced in all a white precipitate which agglutinated, and at the end of an hour the fluid became perfectly bright.

" *(c.)* Sulphate of iron produced no change.

" *(d.)* Infusion of galls rendered all the solutions turbid, and formed a white or yellowish white precipitate which disappeared on boiling the solution, and which formed again in cooling. That produced in the solution of starch agglutinated and became elastic like the precipitate obtained from the solution. The two others remained gelatinous. Artificial tannin produced no precipitate in any one of the three solutions.

" *(e.)* Acetate of alumen produced no precipitates; alumina newly precipitated, which was added to each of the liquids, collected in an hour at the bottoms of the vessels, coloured deep-grey.

" *(f.)* When set apart, the solution of the gelatine of the lichen and that of sago kept a long time without contracting any bad taste or smell; but that of the fecula of grain quickly putrefied contracting a fœtid odour, owing to the small proportion of gluten it contained.

" These results confirm the opinion, that the gelatinous part of the lichen is only a modification of fecula, which determined me to name it *fecula of lichen.*

" 5. *Of the insoluble part of Lichen.*—After the solution of the *fecula*, an insoluble gelatinous part remains, composed of the vessels and the skeleton of the plant, which is to the fecula of the lichen what the feculo-fibrous part of potatoes is to their fecula*. It dries with difficulty, but forms in its dried state a deep-coloured hard mass, with a vitreous fracture. It burns with difficulty with flame, but remains incandescent like peat, exhaling an acid empyreumatic odour, and leaving much ashes.

" This part cannot be correctly regarded as a homogeneous substance, being an aggregate of the different constituent vessels requisite for supporting the vegetable life. But as the separation of the proximate constituents is more important, we may regard it as a homogeneous body.

" In order to ascertain the extent of its ulterior solubility, I boiled a portion of it, deprived by the ordinary means of all its soluble matter, in Papin's digester. At the end of an hour my digester having burst, I was obliged to stop this part of the experiment. The contents of the digester being thrown upon the filter, a limpid fluid passed through, which did not coagulate on cooling. Submitted to evaporation, it neither became turbid nor congealed; but it became gradually viscous like a solution of gum; being diluted with water, acetate of potass threw down a precipitate in it. When completely dried, the residue was transparent, and of a light yellow colour, insoluble in cold water, but swelling up and becoming viscous when treated with it. Boiling water dissolved it; and tannin added to this solution rendered it turbid without producing a proper precipitate; alcohol threw down in it an elastic mass resembling that which has been already described (7, *first Analysis.*)

" Having boiled acetic acid on the insoluble residue of the lichen, it dissolved a portion exactly similar to that obtained by the boiling in Papin's digester.

" These experiments prove that heat gradually changes the nature of the substance in question, rendering it more soluble and

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* See *Einhof's Essay on Potatoes,* in *Gehlen's Journal,* vol. iv. p. 458.

bringing it nearer to the nature of fecula; that substance resembling gum, which in the liquid that drains from the gelatine appears to owe its existence to a change produced by the ebullition in the constitution of the insoluble part. Muriatic acid digested on this part at an elevated temperature, does not dissolve it. Caustic ley does not dissolve it, but colours it brown; and the decanted fluid is not rendered turbid by the addition of acids. When the residue of the lichen still contains its green wax, the alkaline ley contracts a greenish brown hue, and the addition of the muriatic acid renders it grass green, opaque by reflected, and of a transparent brownish colour by refracted light.

"Digesting the residue with galls, it sensibly hardened, indicating combination. Digesting it with solution of acetate of lead *(vinaigre de Saturne)*, it became bright grey, hardened and shrivelled, indicating that it had taken the oxide of lead from the acid.

"From the whole of these premises we may conclude, that 100 parts of the lichen contain:

Syrup	3·6
Acidulous tartrate of potass, tartrate of lime, and a small portion of phosphate of lime	1.5
Bitter principle	3·0
Green wax	1·6
Gum	3·7
Extractive colouring matter	7·0
Fecula of lichen	44·6
Feculent skeleton	36·6
	101·6
Augmentation of weight	1·6

"The lichen contains also a scarcely appretiable quantity of gallic acid. I cannot, however, discover the slightest trace of alumen or resin, which are also stated as constituents of it by Westring.

"B. *Alimentary employment of Lichen Islandicus.*—According to the statements of Troll, the Icelanders go in caravans into the part of the country where the lichen abounds, and collect it in sacks; and after carrying it home, separate all extraneous matters by picking and washing, after which they dry it, and convert it into meal. They consider two parts of the meal of the lichen to be as nutritive as one part of wheat flour. The meal is mixed with water, and the mixture set aside for twenty-four hours; after which milk or butter-milk is added to it, and the whole boiled up to a pottage, which is eaten cold.

"There is abundance of lichen islandicus in many parts of

Sweden. I have found it in Uplande, Sudermania, Nerice, and Astrogothia. Westring found it in great plenty in Dalcarlia.

" The knowledge which we possess of the nutritive quality of this plant should lead to the cultivation of it in other countries, the climate of which may accord with it, and it would not supersede the culture of more useful plants.

" The bitter of the plant has hitherto much limited its use as diet, and confined its employment to medicine: but since Westring taught us how to separate the bitter by the use of alkali, the lichen may be prepared in as palatable a form as any other vegetable containing fecula. The bitter and also the colouring principle, as the foregoing analysis has proved, is scarcely soluble in pure water: but water charged with carbonate of potass dissolves both very readily, without acting upon the fecula. The use of purified potass would be too expensive, and would not answer the purpose proposed better than the common ley; for this ley contains potass, and the presence of other salts and extraneous matters do not interfere with the extraction of the bitter, and the extract. However poor a family be, it can always procure a ley from its ashes.

" The following is the best mode of depriving the lichen of the bitter principle:—Pour upon a pound of picked lichen sixteen pounds of water and eight pounds of alkaline ley. (The ley which I employed contained nearly a gros of salts to each pound, the greater part of which was carbonate of potass, with an excess of base.) The concentration of the ley was unnecessary; it ought not to be too concentrated, because in that case the caustic potass, of which it always contains a certain portion, would take up the fecula. Set the mixture aside for twenty-four hours, taking care to stir it several times in that period, and at the termination decant it: the liquor will be nearly black, and of a very bitter taste; press the lichen lightly between the hands, and then work it two or three times in water, next pour in more water, and set it again apart for twenty-four hours. Food, prepared with the lichen treated in this manner, has not the least disagreeable taste. Sometimes the liquid is a little bitter, at the commencement of the decoction, but this bitterness disappears as the fecula dissolves. If the intention is to free the lichen altogether from the bitter, and obtain a colourless jelly, the lixiviation should be repeated: the process requires, indeed, three days; but in general this delay is not of importance. I have recommended that the lichen should be only slightly pressed; and this precaution is absolutely necessary; for strong expression carries off a considerable quantity of the fecula.

" Twelve or fourteen pounds of water may now be poured

upon the expressed lichen, and boiled till reduced to eight or ten; after which, while yet boiling, the whole must be thrown upon a piece of cloth and the marc expressed. The liquid which is obtained is at first limpid, but it soon becomes opaque. When the lichen has not been well lixiviated, it is a little brown. By cooling, a pelicle is formed, and the jelly coagulates. It is nearly insipid, and requires seasoning.

"Boiling the jelly with cinnamon and raisins, and adding afterwards some white wine and sugar, a dish is obtained, which cannot easily be distinguished from sago. It may be formed into jellies, by concentrating the liquor by boiling so much, that when it cools it will retain the form of any mould into which it may have been poured. In order to produce this effect, it is necessary to boil the lichen with less water; for we have already seen that it is very difficult to reduce a weak decoction by evaporation. One pound of lichen with eight pounds of water, afford a jelly consistent enough, but not sufficient to be moulded. There are two methods of concentrating the liquid. 1. Leaving it to fix, and when the water begins to separate at the edges, throwing the whole upon a cloth, and allowing the fluid part to filter through it; then melting the solid gelatine in a pan over a slow fire, and adding to it lemon-juice, sugar, and wine, &c. when a consistent jelly will be obtained on cooling. It may be coloured a little by cochineal, but not of a very deep red. 2. Evaporate the liquid by boiling it so briskly that the immediate contact of the air, and the consequent formation of pelicles will be prevented.

"Adding to the gelatine, seasoned with vanilla *(la vanille)* and sugar while it is yet hot, a sufficient quantity of cream, a desert cream is obtained. The gelatine ought not to be boiled with the cream, because the gelatine of the lichen, like every other concentrated mucilage, coagulates milk. Vanilla appears to me to be the most convenient spice.

"The insoluble part of the lichen swells like half-boiled sago, and almost melts in the mouth. Proust imagined that it might be eaten like a salad with oil and vinegar, or *à l'estoufade* with almonds, orange-peel, and sugar. Westring prepared the residue in the same manner; and both said that it melted in the mouth. I imitated these dishes, and found them pleasant enough; but they have some defect, which renders them disagreeable to the dainty. All the parts of the lichen do not swell in the same degree: but I am ignorant whether this depends on the age of the plants: it, however, occasions a sensation of filaments between the teeth, mixed with the gelatine. Neither prolonging the boiling, nor picking the plant with the greatest care, can remedy this evil; it is much lessened, however, by mincing it; and altogether evaded by pulverising it.

The insipidity of this vegetable enables us to render it palatable by every kind of seasoning.

" This lichen is undoubtedly a better article of diet than any other vegetable, the cerealia excepted: and may prove of great advantage on board of ships. I am convinced if our fleet (the Swedish) had been provided with it last winter, it would have suffered less from disease. It may also be regarded as a good species of winter vegetable diet, for the tables even of the wealthy.

" The lichen may be reduced to coarse meal or flour, after being well dried."

PART V.

MEDICAL AND PHYSICAL INTELLIGENCE.

I.—LECTURES AND SOCIETIES.

LECTURE VII.—*On the Analysis and Composition of Shell and Bone.* By Professor BRANDE, at Apothecaries' Hall, London.

HAVING in my former Lecture detailed the leading characters of the blood, and of the principal secretions, I now proceed to the chemical history of *shell* and *bone*.

Much that I might otherwise have said upon these subjects has been already anticipated, especially in the description of albumen and gelatine; but they are of so much importance in the animal œconomy, and their chemical properties are of such consequence, that it will not be deemed lost time to appropriate a Lecture to their exclusive consideration. Common observation points out several varieties of shell and bone: it shall be my business to describe these chemically, as far as we have information respecting them.

There are two very distinct varieties of shell; the one is brittle, and, when put into muriatic acid, is entirely soluble: from its resemblance in brittleness, fracture, and general appearance to earthenware, it has been called *Porcellaneous Shell*. The other variety effervesces in muriatic acid; but instead of entirely dissolving, it leaves a skeleton of animal matter. It has a pearly lustre, and is well known under the name of *Mother of Pearl Shell*.

In both these shells the hardening matter is the same, viz. carbonate of lime; but the effect of muriatic acid shews that they differ in their animal parts; which in porcellaneous shell is a minute quantity of gelatine; but in mother of pearl shell consists chiefly of albumen or cartilage.

Shells of different kinds, and prepared in different ways, have long been used in medicine; such as oyster-shells, egg-shells, &c. but they differ not in effect from common chalk, which might be

employed as a substitute for the whole class; although some have been unnecessarily retained in the recently amended edition of the London Pharmacopœia.

In the very remarkable tribe of polypous animals, called Corals or Coralines, there are some curious distinctions.—In *Madripores* the component parts are *gelatine* and *carbonate of lime;* in the *Gorgonia, gelatine;* in the *Isis Hipparis, carbonate of lime* and *cartilage;* in the *Mellepron Polymaphe,* it is *carbonate,* and *phosphate of lime,* and *cartilage;* in some *cartilage* only. The cortical and interior parts of the *Gorgonia nobilis* differ in composition; the former contains phosphate of lime, the latter carbonate.

In the analysis of shell and bone, the proportions of carbonate and of phosphate of lime may be learned by digestion in muriatic acid, which, with the former, forms muriate of lime, but dissolves the latter without decomposition. Pure ammonia throws down the phosphate of lime, and the original weight of carbonate may be obtained by the addition of carbonate of ammonia.

Bone is a necessary part of the higher order of animals, it gives support and defence to the softer parts, protects the vital viscera from injury, and furnishes fixed points to and from which the muscles act. The heart is protected in a cage of bone. It likewise forms weapons of defence, as tusks, teeth, &c.

Fresh bone contains a considerable quantity of fat independent of the marrow in its cavities; when these are removed, it may be kept a long time without undergoing any change. Joint bones yield about one seventh of their weight of fat, but the shank and flat bones scarely afford one twelfth.

Another very important ingredient in bone is gelatine: it may be procured after the separation of the fat by boiling ground bones for a long time in a digester. From six pounds of button-mould-shavings Pelletier obtained one pound of strong glue; and nine pounds and a half from fifty pounds of ivory shavings. The gelatine thus contained in bones is little prone to decay; it has been found unimpaired in bones which have been buried for many years.

Albumen or cartilage is another leading ingredient of bone: it is the rudimental part, in which the earthy or hardened principles are afterwards deposited, and of which therefore a relatively small proportion is contained in the bones of young animals. The albumenous part may be obtained by digesting the bone in dilute muriatic acid, which dissolves the gelatinous and earthy portions, separates the fat, and leaves a cartilaginous skeleton; in all chemical properties it is precisely analogous to coagulated albumen.

The principal soft parts of bone, then, are fat, jelly, and cartilage: the hard or earthy part is chiefly composed of phosphate and carbonate of lime: it was long regarded as carbonate of lime only, until Galen and Scheele pointed out its true composition. Mr. Hatchett has detected in the earthy part of bone a small portion of sulphate of lime; and Fourcroy has ascertained the existence of phosphate of magnesia in all bones except those of the human subject.

Phosphorus, which formerly was derived by a nauseous process

from urine and excrement, is now exclusively prepared from bone earth, by a process invented by the celebrated Scheele. For this purpose the bones are calcined, and the residuary ashes diffused in about twelve parts of water, to which half a part of sulphuric acid has been previously added. The mixture is boiled for one hour, filtered, and evaporated to one-fourth its original bulk; it is then again filtered and evaporated to dryness; the dry mass, consisting of impure phosphoric acid, is distilled with half its weight of charcoal, in a coated earthen retort, the beak of which is immersed in a bason of water: at a bright red heat, the phosphorus distils over.

Teeth are composed of bone and enamel: the former resembles common bone, the latter consists chiefly of phosphate of lime and gelatine, and leaves no cartilaginous skeleton when acted upon by acids: hence the analogy pointed out by Mr. Hatchett between bone and mother of pearl shell, and between enamel and porcellaneous shell.

When the composition of bone had been satisfactorily made out, it was imagined by physicians, that the internal exhibition of phosphate of lime might be useful, in diseases arising from its deficient deposition in bones, as mollities ossium, rickets, &c.; but it passes off by the bowels unaltered, as is seen in dogs fed upon bones, when the soft parts only are digested, and the phosphate of lime voided unaltered. This was formerly used in medicine under the ridiculous appellation of Album Græcum.

The products of the distributive distillation of bone arises chiefly from its albumen and gelatine, and have already been described; the residuum is chiefly charcoal and phosphate of lime; and when ground into fine powder, is known under the name of Ivory-black.

Royal Society. — On Thursday, the 20th of April, a paper by Sir Humphrey Davy, on a combination of iodine and oxygen, was read. He caused a current of euchlorine gas, dried by passing through muriate of lime, to act upon iodine. A combination took place. When the solid body formed was exposed to a moderate heat, chloriode was driven off in the state of vapour, and an oxiode, or compound of oxygen and iodine, remained behind. This substance is solid, of a white colour, sinks rapidly in sulphuric acid, its taste astringent, dissolves rapidly in water, and forms a colourless solution, which the author calls oxiodic acid. This liquid reddens vegetable blues, then destroys them, and changes some colours into yellow. Oxiodine has the property of combining with different bases, and forming oxiodes. The oxiodic acid likewise combines with the alkalies, earths, and oxides, and forms oxiodates. It combines likewise with the different acids. When dropped into sulphuric acid, a solid substance falls, which, according to Sir H. Davy's experiments, is composed of 20 oxiode and 8 sulphuric acid. Its combinations with acids are probably all hydrates. The oxiodic acid dissolves gold and platinum. The supposed combination of oxygen and iodine described by Gay-Lussac was a compound of oxiode and sulphuric acid, and contained likewise barytes.

(For the Remainder of Intelligence, *see p. 529.)*

A Meteorological Journal, kept at Richmond, Yorkshire,

From the 21st of April, to the 20th of May, 1815.

D.	Barometer. Max.		Min.		Therm. Max	Min.	Rain Gage.	Winds.	Weather.
21	28	90	28	90	57	37	28	SW.SE.NE..	1 4 R.. 2 3 Cy..
22	29	04	29	02	50	37	16	NE...	1 Sh. 4 R..
23	29	13	29	09	48	36	12	NNE..	1 R..
24	29	33	29	29	52	33	01	N..	1 Sh.. and S.. 4 Moon....
25	29	68	29	50	53	38	03	wnw...e by n.	1 S... 2 Sh.
26	29	80	29	80	56	34		E..	1 Cy.. 2 S... 4 Moon....
27	29	80	29	75	61	35		N..	1 S...
28	29	64	29	59	64	36	04	NW.NE.	1 S.... 2 Cy. 3 R. 4 Cy..
29	29	53	29	41	53	36	03	NE...	1 S.. 4 R.
30	29	45	29	36	50	37	18	NE.	1 sh. of snow. &hail & S..
1	29	58	29	58	66	41		E.NE.	1 S... 4 Cy..
2	29	61	29	59	59	44		NE..	1 Mist...
3	29	59	29	53	63	44		N..	1 Mist.. 2 S..
4	29	53	29	44	64	39		N..NE..	1 S.. 4 Mist..
5	29	45	29	45	67	44		N..NE..	1 S...
6	29	45	29	37	62	47	03	E.	1 Mist... 2 Cy... 3 S. 4 R.
7	29	37	29	37	62	48	05	SE.	1 Sh. 3 S..
8	29	42	29	37	66	50	08	SSE.	1 S.. and Sh.
9	29	57	29	46	66	48		S.SW..	1 4 Cy.. 2 3 S...
10	29	46	29	42	67	52	03	SE.SW..	1 Cy.. 2 S.. 3 R.
11	29	32	29	10	73	49		SW..SSW...	1 S.. 4 Lightning...
12	29	27	29	27	66	49	05	SW...	1 S.. and Sh.
13	29	39	29	34	67	46		SW..	1 S..
14	29	46	29	39	71	46	07	vble.SW..	1 S... 2 Sh. and S..
15	29	53	29	39	62	45	16	SE.SSW..	1 R.. 3 S..
16	29	75	29	72	64	44		SW..	1 S...
17	29	86	29	82	61	50	21	SW..	1 R 2 S..
18	29	88	29	81	72	53		W..	1 S...
19	29	74	29	49	70	52		WNW..	1 S...
20	29	34	29	15	58	40	04	W..SW....	1 3 4 Sh. 2 S..

The quantity of rain during the month of April was 1 inch 19-100. The wind from the 8th of April to the 9th of May has generally been from the Northward and Southward; when sheltered from it, and exposed to the rays of the sun, the body was uncomfortably heated, but on returning under its influence, it was suddenly chilled. This state of the temperature of the atmosphere has been productive of a severe catarrhal complaint, attended with a great degree of fever, and in some cases with delirium; from which neither rank, sex, nor age were exempt; yet no fatal case has come to the Reporter's knowledge. Since the 9th of May, when the wind got round to the Southward and Westward, this disease has very much declined. A case of Hydrocephalus has been under treatment, in which the liver seemed to be much affected, and the bowels in so torpid a state as to require large and repeated doses of calomel, aided by other purgatives and injections to move them. The patient, a girl about thirteen years of age, died on the 14th day of attendance, although she had been subject to severe attacks of head-ache and irregularity of the bowels for some time previous to her friends applying for medical assistance: the body was not examined. The two cases of Anasarca mentioned in last Report have proved fatal. A few cases of Diarrhœa, Gastrodynia, Ophthalmia, Phthisis Pulmonalis, Urticaria, and Varicella have been treated. Typhus has nearly disappeared. The Reporter will answer the inquiries of *Medicus* in his next communication.

DISEASES.	DISTRICTS. 1 S.W.	2 S.	3 S.E.	4 E.	5 N.E.	6 N.	7 N.	8 W.	9 Surry sideW	10 Surry sideE.	11 Hamp Highg	No. of Cases.	Fatal.
Anasarca	7	1	4	3	3	4	1	1	.....	2	.....	26	2
Ascites	11	.....	2	.....	2	4	2	.....	2	.....	.....	23	3
Asthma	10	3	6	7	15	8	29	3	4	9	5	99	2
Acne	.....	1	4	.....	.....	.....	.....	.....	2	1	.....	8	
Apoplexia	1	.....	2	.....	1	.....	.....	1	.....	1	.....	6	2
Aphtha	1	2	.....	2	7	5	.....	1	.....	1	.....	19	
Amenorrhœa	6	2	.....	3	5	1	2	.....	3	1	.....	23	
Asthenia	6	5	7	6	12	5	6	7	5	9	4	72	1
Abortio	2	.....	1	1	3	.....	2	2	.....	1	2	14	
Bronchitis *acuta*	3	.....	.....	.....	2	1	2	.....	.....	.....	.....	8	
—— *chronica*	5	.....	.....	.....	.....	.....	.....	2	.....	1	.....	8	
Cancer	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1	
Cephalæa	2	.....	1	2	.....	.....	.....	.....	1	.....	.....	6	
Chlorosis	.....	1	3	1	3	1	1	.....	2	.....	7	19	
Cholera	2	.....	4	1	.....	3	2	.....	2	1	.....	15	
Chorea	2	.....	.....	1	.....	.....	1	.....	.....	.....	.....	4	
Cephalalgia	13	2	5	3	2	8	9	5	4	8	4	65	
Colica	2	1	3	1	4	.....	3	7	3	3	4	31	
Catarrhus	25	12	16	23	18	9	43	37	14	15	13	225	
Convulsio	.....	.....	.....	.....	1	.....	2	1	.....	2	1	7	2
Carditis	.....	.....	.....	.....	.....	.....	1	2	.....	.....	.....	3	
Cynanche *Tonsillaris*	5	2	3	8	2	2	8	17	3	8	11	69	
—— *maligna*	2	.....	.....	.....	5	.....	1	.....	1	.....	.....	9	
—— *Trachealis*	.....	.....	1	2	.....	1	.....	.....	.....	.....	.....	4	1
—— *parotidea*	1	.....	4	.....	.....	2	.....	2	2	.....	.....	11	
Diabetes	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	2	
Dysenteria	2	2	1	2	3	.....	4	.....	1	.....	.....	15	1
Diarrhœa	10	6	12	18	7	15	13	10	11	10	6	118	
Dyspnœa	9	1	.....	1	3	6	.....	2	3	4	3	32	
Dyspepsia	20	13	15	48	10	10	23	19	16	15	15	204	
Dysuria	4	.....	.....	2	5	.....	.....	.....	.....	1	.....	12	
Eczema	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	2	
Erythema	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	.....	3	
Erysipelas	1	.....	1	2	5	2	3	1	2	2	3	22	
Enteritis	4	.....	.....	1	.....	.....	2	3	.....	.....	.....	10	2
Entrodynia	.....	10	4	.....	.....	.....	4	.....	3	2	4	27	
Epilepsia	.....	.....	1	.....	.....	1	4	1	.....	2	.....	9	
Febris *remittens*	13	13	9	7	5	8	7	6	4	16	5	93	
—— *intermittens*	1	7	.....	10	4	3	7	.....	3	1	.....	36	
—— *puerpera*	.....	.....	.....	.....	1	.....	.....	1	.....	1	.....	3	
—— *synocha*	.....	2	.....	.....	.....	4	.....	.....	1	.....	.....	7	
—— *synochus*	.....	1	2	.....	.....	.....	4	.....	.....	.....	.....	7	
Gastritis	.....	.....	.....	.....	.....	.....	.....	3	.....	1	.....	4	
Gastrodynia	10	3	2	10	6	2	7	2	2	5	3	52	
Hæmatemesis	.....	.....	.....	3	.....	.....	1	1	.....	.....	2	7	
Hæmaturia	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1	
Hæmoptoe	5	2	.....	4	.....	8	2	2	.....	4	1	28	
Hæmorrhois	2	3	4	2	2	.....	1	5	3	5	1	28	
Hepatitis	.....	.....	1	17	2	3	.....	.....	2	6	.....	31	2
Hysteria	4	3	2	3	6	2	2	5	4	3	5	39	
Hydrocephalus	1	.....	.....	.....	.....	1	.....	2	.....	.....	.....	4	2
Hydrothorax	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1	1
Herpes	2	6	2	2	3	6	.....	2	4	1	.....	28	
Hypochondriasis	2	3	3	.....	1	.....	3	2	1	.....	2	17	
Icterus	3	.....	.....	3	2	2	5	1	1	2	.....	19	
Impetigo	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1	

DISEASES.	DISTRICTS. 1 S. W.	2 S.	3 S.E.	4 E.	5 N.E.	6 N.	7 N.W.	8 W.	9 Surry sideW	10 Surry sideE.	11 Hamp Highg	No. of Cases.	Fatal.
Ischuria	.....	2	2	1	.....	.....	1	.....	2	1	.....	9	
Leucorrhœa	5	.....	4	.....	4	1	1	5	3	.....	2	25	
Lithiasis	.....	.....	.....	.....	.....	.....	.....	1	.....	2	.....	3	
Lepra	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	1	
Lichen	.....	.....	.....	1	.....	.....	.....	.....	1	.....	.....	2	
Mania	1	.....	.....	.....	.....	2	9	.....	.....	.....	.....	12	
Menorrhagia	6	6	2	4	2	1	11	5	3	3	3	46	
Miliaria	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	
Morbi *Infantiles**	9	11	10	12	14	12	20	31	12	42	10	183	
——*Biliosi*	10	8	15	11	19	5	10	31	15	35	3	162	
Neuralgia	.....	.....	.....	1	.....	1	.....	.....	.....	.....	.....	2	
Nephritis	.....	.....	.....	2	.....	.....	.....	3	.....	.....	.....	5	
Obstipatio	5	1	2	7	4	10	5	4	3	2	2	45	1
Ophthalmia	12	3	4	1	6	11	14	4	7	18	8	88	
Odontalgia	.....	.....	.....	1	.....	1	.....	.....	1	.....	.....	3	
Otalgia	1	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	2	
Paralysis	1	3	1	3	3	5	5	1	1	.....	.....	23	2
Phthisis *Pulmonalis*	6	.....	.....	5	3	7	15	3	2	.....	2	13	13
Pertussis	.....	2	.....	4	1	4	3	6	.....	.....	4	24	1
Peritonitis	.....	.....	.....	2	.....	3	4	2	.....	.....	.....	11	1
Phrenitis	.....	.....	1	.....	.....	.....	1	.....	.....	.....	.....	2	1
Pneumonia	.....	4	8	12	8	10	14	5	4	5	1	71	6
Pleuritis	.....	.....	1	2	.....	3	1	.....	.....	.....	.....	7	
Pleurodyne	.....	2	1	.....	.....	.....	2	.....	1	.....	.....	6	
Podagra	3	.....	2	5	6	4	6	1	2	1	1	31	
Porrigo *larvalis*	1	6	.....	1	.....	.....	.....	.....	.....	.....	.....	8	
—— *scutulata*	1	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	3	
—— *favosa*	.....	.....	1	.....	.....	.....	.....	.....	2	.....	.....	3	
Psoriasis	2	4	.....	2	.....	.....	2	2	.....	.....	.....	12	
Purpura	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	
Pyrosis	3	5	2	.....	.....	.....	.....	.....	1	.....	.....	11	
Phlogosis	5	1	2	.....	.....	2	3	.....	2	.....	.....	15	
Rachitis	.....	.....	.....	.....	.....	2	2	.....	.....	.....	.....	4	
Rheumatis. *acut.*	17	6	5	7	3	15	6	10	5	5	2	81	
—— *chron.*	11	.....	4	6	6	3	23	11	7	15	3	89	
Rubeola	4	4	.....	.....	.....	2	11	2	.....	2	5	30	
Scabies	3	.....	3	6	11	7	36	.....	3	3	.....	72	
Scarlatina *simplex*	.....	4	.....	1	.....	4	.....	8	.....	1	.....	18	
—— *anginosa*	.....	.....	.....	2	.....	.....	.....	8	.....	2	.....	12	
—— *maligna*	.....	.....	.....	.....	.....	.....	.....	4	.....	.....	.....	4	
Scirrhus *uteri*	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	
—— *pylorus*	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	
Scrofula	4	.....	3	3	2	.....	4	2	3	3	3	27	
Sycosis	.....	.....	.....	.....	.....	.....	.....	.....	1	1	.....	2	
Tabes *Mesenterica*	.....	4	.....	.....	.....	1	2	2	1	.....	2	12	
Tic Doloreux	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1	
Typhus	.....	.....	.....	3	1	.....	1	1	.....	.....	.....	6	2
Variola	.....	7	.....	4	4	10	8	.....	.....	1	.....	34	5
Varicella	2	.....	.....	.....	.....	6	3	.....	.....	2	.....	13	
Vermes	8	.....	3	.....	5	9	4	2	3	2	3	39	
Vertigo	3	.....	4	7	2	2	1	6	4	6	.....	35	
Urticaria	1	.....	2	.....	4	2	3	1	.....	1	3	17	
Total No. of Cases	351	190	208	316	260	273	438	320	198	306	156	3016	
Total of Deaths	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	53

* *Morbi Infantiles* is meant to comprise those Disorders principally arising from dentition or indigestion, and which may be too trivial to enter under any distinct head; *Morbi Biliosi*, such Complaints as are popularly termed *bilious*, but cannot be accurately classed.

MANCHESTER MEDICAL

AN ABSTRACT from the REGISTER *of those* DISEASES *of* LONDON, *presumed to originate in, or be influenced by, the State of the* ATMOSPHERE, *with a* DIURNAL REFERENCE *to the* METEOROLOGICAL TABLE.

METEOROLOGICAL TABLE FOR LONDON,

From the 20th of APRIL, to the 19th of MAY, 1815.

M.	Therm.	Barom.	Hygrom. Dry.	Hygrom. Damp.	Winds.	Atmos. Variation.	D.	Asthma.	Apoplexia.	Bronchitis.	Cholera.	Cephalalgia.	Colica.	Catarrhus.	Cynanche.	C. Trachealis.	Dysenteria.	Diarrhœa.	Dyspnœa.	Erysipelas.	Febres.	Hæmoptoe.	Morbi Biliosi.	Ophthalmia.	Paralysis.	Phthisis.	Pertussis.	Pneumonia.	Podagra.	Rheumatismus.	Rubeola.	Scarlatina.	Typhus.	Variola.	Varicella.	Vertigo.	Urticaria.
	40 53 48	29⁹	20		W.	C..R.C..	20	4		1		2	2	6	2			4			6	1	3	2			2	3		7				3			1
	46 47 41	29⁵ 28³	3		E..S..	C...R..R....R....in N	21	2			2	4	3	5	2	1		5	1		7	2	2	4	1	1		6	1	4	2			2		4	
	43 48 43	28⁸ 29¹		20	NE..NW..	R..R....R...	22	4	1			1	1	7	1		1	7		2	8		4				7	2	9	2	3	1	4		3	1
○	43 48 43	29² 4		25	N..	C....R..F...	23	1		2	1		1	11	3			3	3	2	6	1	1	3	2	2	4	4	1	10	3				2	5	3
	42 50 43	29⁵ 6		20	N..	C.Hail.F..	24	3				3		8	1			4	1	1	5	2	6	7	2	2		1		7				2		2	
	41 51 43	29⁷	10		NW..	F...C..R..	25	2	1	1		4	1	5	4	1	2	7	2		5	3	8	2			3	1		7	1	2				1	
	45 59 47	29⁸ 30²	5		E.	F.F....F...	26	5			1	1	2	5	2			6	3		4		10	1		4	1	4	4	8	1	6		4			
	45 56 53	30¹		2	NW..	R.C.F.	27			1		3	3	4				6	1	1	1		11	4	1	1	1	2		4	2	3		1		1	
	49 67 51	30 29⁹		3	E.NE.	C..F..C..	28	3		1		5	1	8	2		2	5	4		6	1	7	5		1	1	1	1	3		3	1	1	3	2	1
	49 52 48	29⁷		1	NE..	C..R.C...	29	2				2		10	1	1		3	4	3	8		8	1	1	2	3	1	1	3	2			1			
	44 51 48	29⁶	3		E.	F...R..R.	30	5	2	1		1		11	4		1	2	3		7		8	2		3		4	1	6	4				1		
◑	50 62 57	29⁷ 8	4		E.SE..	Fog..F....F...	1	3			2	4	1	12	5				1	2	7	1	5	6	3	6	1	4	2	7	1	1			1		2
	55 65 58	29⁸ 9	12		SE.	F..F...F...R...C..	2	2		2		1	2	8	3		1	4	1	1	5		5	5		2	1	1	4	11	1						
	54 65 56	29⁸ 6		3	NE..	C...R.F...F...	3	1			3	3		8			2	6			4	2	6	4	2				3	9			2	2		1	
	52 64 58	29⁷ 8	10		NE..	C...F....F...R.	4	5		2		3	1	11	2			9			5	1	6	1	1		2			3							
	53 68 58	29⁸	15		NW.	F..R....R..	5	4				4		6	1			8		1	2	1	9		1	2		4		3				3	3	2	3
	52 51 55	29⁸	14		NW.	C..F...C...	6	6	1		1		1	8	4		1	5	1			1	11	5		1		5		7	2	2		3	4		
	55 67 56	29⁷ 8	3		S c	R.F...R...	7	4		1		2	2	9	5			4	2	2	4		5	4		3	1	4	2	8		3		2	4		
	56 66 55	29⁷ 8	2		S.	C...F....F..	8	3				1	3	7	2			3			6		6	1	2	2		4	1	6	2	1		1		3	2
◐	55 66 56	29⁹ 30		3	W..	C..F...F...	9	5		1		2		10	3		1	3	1	2	8	3	4	1	2	1		2	1	6		4	1	2			1
	53 76 57	30		2	W...	R..F..C...	10	3			1	1	1	6	2			2			9	1	4	2				3	7	4							1
	56 63 62	29⁹ 7	10		W.SW..	F..F....R..	11	4				3		5	6		2	1			5	1	6	4		2	1	2		4		1				2	
	56 64 54	29⁷ 8	1		SW...	C..F...F..	12	5				2	2	5	3				2	1	5	2	4	3	1	1		3	1	4				1	1		
	55 64 52	29⁷ 8		2	SW..	R..R...F....	13	2	1		1	4		8	4			2			6		7	3		1		4		5		2					
	53 64 53	29⁹	3		W...	C..R...F...	14	2		1		3		4	5		1	2		1	7	2	2	4	1		2	3		6	2				1		
	55 60 53	29⁹ 8	4		SW...	C.C..R...	15	4					1	9	3			5	1		5		1	5		1			1	2		2		2		3	
◑	52 65 56	30 3	5		SW..	C...F...F...	16	5			2	2		8	6			4		2	2	1	4	1	2		1	4		5					1		1
	56 67 59	30³ 4	20		W..	F.F....C..	17	4		1		1		8	3			2	1		2	1	6	3		2		3		5	1			1		1	
	60 65 61	30³	21		W.	R.F....F...	18	2		1		2	1	6	5	1		3	1		1		1	2	1	1		2	2	2		1	1		1		
	60 66 61	30²	20		NW...	C..F...F...	19	4			1	1	1	7	5		1	3		1	1	2	2	2		1		2		3				1		1	
						No. of Cases...		99	6	16	15	65	31	225	89	4	15	118	32	22	146	28	162	88	23	43	24	78	31	170	30	34	6	34	13	35	17
	Princes Street, Cavendish Square.					Fatal.....		2	2							1	1								2	13	1	6				2	5			

Total of Cases,.....1699. Total of Deaths,.....35.

Quantity of Rain from April 20, to May 19, one inch 14-100ths.

BILL OF MORTALITY *from April 18, to May 16, 1815.*

CHRISTENED.

	April 25.	*May 2.*	*May 9.*	*May 16.*
Males.....	190	180	255	269
Females.....	154	169	230	253
	344	349	485	522

Total.....1700.

BURIED.

	April 25.	*May 2.*	*May 9.*	*May 16.*
Males.....	167	157	197	162
Females.....	144	160	192	142
	311	317	389	304

Total.....1321.

OF WHOM HAVE DIED.

Under 2 Yrs....	76	78	105	81	Betw. 40 & 50...	39	34	43	38
Betw. 2 & 5...	32	29	31	27	50 & 60...	28	35	42	22
5 & 10...	15	12	13	9	60 & 70...	27	27	39	20
10 & 20...	13	10	9	10	70 & 80...	22	24	31	25
20 & 30...	20	22	23	23	80 & 90...	7	12	14	12
30 & 40...	30	32	36	38	90 & 100...	2	2	3	1
Small Pox.....	6	9	6	5	— Total....26				

ON the 2nd, frequent thunder in the day, but not heavy. On the 5th, storm of thunder with heavy rain and hail; 10th, thunder with rain in the night; 11th, thunder with rain in the evening.

Common opinion ascribes to the vernal month of May an extraordinary mortality; but the records of the present Register happily prove its fallacy. The frequent storms of thunder and lightning which have unusually pervaded the spring, have tended to purify the atmosphere, and, no doubt, influenced the state of health of this vast metropolis. Hence most of the prevailing diseases have assumed a milder form; and the Bills of Mortality are numerically diminished.

Complaints of the head, induced by determination or congestion, and acting on the nervous system, are generally less frequent, as *Apoplexia, Convulsio, Epilepsia*; and so likewise is *Hydrocephalus* both in our last and present returns. But affections of the head, especially manifested by *Vertigo*, have accompanied almost every form of morbid derangement of this period; and, in many instances, though perhaps only symptomatic, appeared to be an idiopathic disease.

Since the setting-in of warm weather, that is from about the beginning of May, an acute *Bronchitis* has been extremely general among horses.

Hepatic affections and disorders of the *primæ viæ* have been very common; though instances of the severer form, *Cholera Morbus*, are, considering the season, remarkably rare.

Asthma has rather increased. So also has *Phthisis Pulmonalis;* and the deaths from its unrelenting ravages are more numerous. Among the many melancholy instances, none have come to the Reporter's knowledge, more decisive and marked of its hereditary character, has occurred in the family of a lady who has just buried her two last children; eleven others, and her husband, having, within a few years, fallen victims to this fatal disease.

Rubeola has decreased very much; and the cases reported are of a milder character. *Scarlatina* appears to be most rife in the Eighth or Western District. It is at present chiefly confined to the lower classes; and has not been fatal.

Several cases of relaxed *Uvula* are mentioned, occasioning considerable distress, and accompanied with head-ache and a convulsive cough. They have been found very difficult of cure.

Attacks of *Rheumatismus Acutus* have been frequent, and severe. They have in general yielded to brisk purging, followed by a course of bark and turpentine; and emetics given, as in intermittents, on the accession of the paroxysms of pain.

Typhus is probably as low in the scale as can be expected in so large a number of cases of diseases. A man who died of *Dysenteria* had been suffering from it six months: it supervened on the decline of typhus. A case of *Phrenitis* was brought on by hard drinking, and terminated the life of the patient, aged 26, in fourteen hours.

Examinations post mortem.—1. In one, who died from the rupture of an aneurism of the arteria innominata into the trachea, the aorta was observed to be diseased in several places.—2. In a woman who died from *Ascites*, after repeated attacks of jaundice, the liver was tuberculated.—3. A case of *Enteritis* had continued three days before it proved mortal. On inspection, two quarts of pus were in the cavity of the abdomen, the small intestines were highly inflamed and agglutinated; and there were marks of considerable peritoneal inflammation.—4. On examining the brain of a man aged 67, who died of *Hemiplegia* of the right side, the arteries were found very much ossified; there was a pulpy tumour in the medullary substance of the left hemisphere, and the ventricles contained about three ounces of fluid.

INTELLIGENCE CONTINUED.

Royal College of Surgeons.—The Museum of the College was opened for inspection on Tuesday the 23rd of May ult. and will be open on Tuesdays and Thursdays during the months of June, July, and August. For particulars relating to admission, application may be made at the College between twelve and two o'clock, on Mondays, Wednesdays, and Fridays.

II.—MEDICAL.

Small-Pox Infection.—The Board of the National Vaccine Establishment did, much to its credit, in April last, prosecute and convict, in the Court of King's Bench, a woman at Paddington, for exposing her child, after Inoculation, in the streets, when covered with Small-Pox pustules; by which mis-conduct, she infected eleven persons; eight of whom died, and another lost the use of one eye.

She was indicted upon the old law, which positively declares, the exposure of a person in a public place with *any* infectious disease which endangers the lives of others, to be a criminal act, and punishable by law. But as this was the first indictment for such an offence, the punishment was

mitigated to three months imprisonment: the object of the prosecution being, in this instance, rather to manifest, that persons so offending are amenable to existing laws; and to make an example to deter the ignorant or evil-disposed from similar practices.

Emetics in Acute Rheumatism.—Our German correspondent informs us, "The repetition of emetics is strongly recommended by *M. Horn* in cases of Rheumatismus calidus febrilis, in which they operate as beneficially as vesicatories in chronic rheumatism." The following is his opinion of their modus operandi: "Emetics probably produce this effect by calling forth a new affection in the nervous system of the abdomen, and sensibly changing the dynamic relations of the most important organs of digestion, thus producing an alterative suffering, on the occurrence of which the primary affection of the nervous system must cease."

III.—PHARMACEUTICAL.

Musk.—The following remarks on the trade in Siberian Musk have been communicated by *Mr. Rehmann*:—"The greater part of the Siberian Musk is sent to China, and sold there at two and two-and-a-half rubles per bag. The Russian government might therefore reap a considerable profit, by causing all the Siberian Musk, or at least the greater part annually obtained, to be bought up, and sent to Europe, where it might be sold to better advantage. It is certainly inferior in volatility and medical properties to the Thibetian Musk, but it nevertheless deserves to be more generally used. The Chinese sell again a great part of this musk to Europeans at Canton, for genuine Thibetian; and thus it is imported to Europe, a very expensive and adulterated medicine: and hence the different degrees of efficacy of the musk found every where in the druggists' shops."

IV.—MISCELLANEOUS.

Dr. Merriman will re-commence his Lectures on Midwifery and the Diseases of Women and Children, on Monday, June 5th, at the Middlesex Hospital.

The Americans confined in the prison on Dartmoor, have petitioned Mr. Madison and Mr. Adams to confer some mark of national gratitude on Dr. Macgrath, Physician to that prison; as a manifestation of their sense of his professional exertions.

Anthony Carlisle, Esq. has been appointed Surgeon-Extraordinary to the Prince Regent.

Monthly Prices of SUBSTANCES *employed in* PHARMACY.

		S.	D.
Acaciæ Gummi elect.	lb.	3	6
Acidum Citricum		54	0
—— Benzoicum	unc.	6	6
—— Sulphuricum	P. lb.	0	8
—— Muriaticum		2	0
—— Nitricum		4	0
—— Aceticum	cong.	4	6
Alcohol	M. lb.	4	6
Æther sulphuricus		10	6
—— rectificatus		12	0
Ærugo	lb.	9	6
Aloes spicatæ extractum		6	9
— vulgaris extractum		5	6
Althææ Radix		1	3
Alumen		0	6
Ammoniæ Murias		2	6
—— Carbonas		4	0
Amygdala dulcis		5	0
Ammoniacum (Gutt.)		16	0
—— (Lump.)		4	0
Anthemidis Flores		2	3
Antimonii oxydum		6	0
—— sulphuretum		1	0
Antimonium Tartarizatum		6	6
Arsenici Oxydum		1	0
Assafœtidæ Gummi-resina	lb.	7	0
Aurantii Cortex		4	6
Argenti Nitras	unc.	6	9

		S.	D.
Balsamum Peruvianum	lb.	30	0
—— Tolutanum		22	0
Benzoinum elect.		14	0
Calamina præparata		0	6
Calumbæ Radix		3	6
Cambogia		10	6
Camphora		8	6
Canellæ Cortex			
Cardamomi Semina opt.	lb.	2	0
Cascarillæ Cortex		2	6
Castoreum	unc.	5	0
Catechu Extractum	lb.	2	6
Cetaceum		2	9
Cera alba		4	0
—— flava		3	6
Cinchonæ cordifoliæ Cortex (yellow)		6	6
—— lancifoliæ Cortex (quilled)		10	6
—— oblongifoliæ Cortex (red)		16	0
Cinnamomi Cortex		20	0
Coccus (Coccinella)	unc.	3	6
Colocynthidis Pulpa	lb.	11	0
Copaiba		6	6
Colchici Radix		3	6
Croci stigmata	unc.	5	0
Cupri sulphas	lb.	1	0
Cuprum ammoniatum		14	0
Cuspariæ Cortex		4	0
Confectio aromatica		12	0

		S.	D.
Confectio Aurantii		3	6
—— Opii		5	0
—— Rosæ Caninæ		2	0
—— Rosæ Gallicæ		2	3
—— Sennæ		1	8
Emplastrum Lyttæ		7	6
—— Hydrargyri		4	0
Extractum Cinchonæ	unc.	2	6
—— Cinchonæ resinosum		5	0
—— Colocynthidis		3	6
—— Colocynthidis comp.		1	6
—— Conii		0	8
—— Elaterii		24	0
—— Gentianæ		0	6
—— Glycyrrhizæ	lb.	4	6
—— Hæmatoxyli	unc.	0	8
—— Humuli		0	6
—— Hyosciami	unc.	1	0
—— Jalapæ	2*s.* 0*d.* Res.	3	6
—— Opii		3	6
—— Papaveris		1	0
—— Rhæi		2	6
—— Sarsaparillæ		1	4
—— Taraxaci		0	8
Ferri carbonas	lb.	1	0
— sulphas		1	3
Ferrum ammoniatum		5	0
—— tartarizatum		5	0
Galbani Gummi-resina		10	0
Gentianæ Radix		1	3
Guaiacum		8	6
Hydrargyrus purificatus		6	6
—— præcipitatus albus		8	0
—— cum creta		6	0
Hydrargyri Oxymurias	unc.	0	9
—— Submurias		0	9
—— Nitrico-Oxydum		0	9
—— Oxydum Cinereum		1	4
—— Oxydum rubrum		6	0
—— Sulphuretum rubrum		0	8
Hellebori nigri Radix	lb.	2	6
Ipecacuanhæ Radix		18	0
—— Pulvis		19	0
Jalapæ Radix		6	6
—— Pulvis		7	6
Kino		9	0
Liquor Plumbi Acetatis	M. lb.	1	8
— Ammoniæ		2	6
— Potassæ		1	0
Linimentum Camphoræ comp.		6	6
Lichen Islandicus	lb.	1	4
Lyttæ		14	0
Magnesia		9	0
Magnesiæ Carbonas		3	6
—— Sulphas, opt.		1	6
Manna optima		9	0
— communis		5	0
Moschus pod. (30*s.*)	in gr. unc.	40	0
Mastiche	lb.	7	0
Myristicæ Nuclei		22	0
Myrrha elect.		9	0
Olibanum		4	6
Opoponax		26	0
Opium (Turkey)		36	0
Opium (East India)		37	0
Oleum Amygdalæ	lb.	4	0
— Anisi	unc.	2	9
— Anthemidis		6	6
— Cassiæ		8	0
— Caryophilli		5	6
— Cajuputi		7	0
— Carui		1	9
— Juniperi Ang.		3	0
— Lavandulæ		4	6
— Lini	cong.	6	6
— Menthæ piperitæ	unc.	5	0
— Menthæ viridis Ang.		4	6
— Olivæ	cong.	29	0
— Olivæ secundum	14*s.* to	18	0

		S.	D.
Oleum Pimentæ	unc.	6	6
— Ricini optim.	(per bottle)	9	6
— Rosmarini	unc.	0	9
— Succini 2*s.* 4*d.*	—— rect.	4	0
— Sulphuratum	P. lb.	1	6
— Terebinthinæ		1	6
— —— rectificatum		2	0
Papaveris Capsulæ	(per 100)	5	0
Plumbi Carbonas	lb.	0	8
— Superacetas		2	6
— Oxydum semi-vitreum		0	8
Potassa Fusa	unc.	0	9
— cum Calce		0	6
Potassæ Nitras	lb.	1	6
— Acetas		9	6
— Carbonas		1	6
— Supercarbonas		4	6
— Sulphas		1	4
— Sulphuretum		2	6
— Supersulphas		0	6
— Tartras		3	6
— Supertartras		1	10
Pilula Hydrargyri	unc.	0	9
Pulvis Antimonialis		0	8
— Contrayervæ comp.		0	6
— Tragacanthæ comp.		0	4
Resina Flava	lb.	0	3
Rhæi Radix (Russia)		40	0
—— (East India)		16	0
Rosæ petal.		9	0
Sapo (Spanish)		2	3
Sarsaparillæ Radix		7	0
Scammoneæ Gummi-Resina	unc.	5	0
Scillæ Radix siccat	lb.	15	6
Senegæ Radix		5	0
Sennæ Folia		7	0
Serpentariæ Radix		10	0
Simaroubæ Cortex		3	6
Sodæ Boras		4	6
— Sulphas		0	10
— Carbonas		3	0
— Subcarbonas		1	3
— —— exsiccata		5	0
Soda tartarizata		3	0
Spongia usta		20	0
Spiritus Ammoniæ	M. lb.	4	0
— —— aromaticus		4	0
— —— fœtidus		4	0
— —— succinatus		5	0
— Cinnamomi		3	0
— Lavendulæ		5	6
— Myristicæ		3	6
— Pimentæ		5	6
— Rosmarini		4	0
— Ætheris Aromaticus		7	0
— —— Compositus		6	6
— —— Nitrici		4	0
— —— Sulphurici		6	6
— Vini rectificatus	cong.	26	0
Syrupus Papaveris	lb.	2	0
Sulphur		0	8
— Sublimatum		0	10
— Lotum		1	2
— Præcipitatum		1	2
Tamarindus opt.		2	6
Terebinthina Vulgaris		0	10
—— Canadensis		7	6
—— Chia		9	0
Tinct. Ferri muriatis		5	6
Tragacantha Gummi		6	6
Valerianæ Radix		1	6
Veratri Radix		1	6
Unguentum Hydrargyri-fortius		5	6
—— —— Nitrati		2	8
—— —— Nitrico-ox.		3	0
Uvæ Ursi Folia		3	0
Zinci Oxydum		6	0
— Sulphas purif.		2	6
Zingiberis Radix opt.		3	6

Prices of New Phials per Gross.——8 oz. 70*s.*—6 oz. 58*s.*—4 oz. 47*s.*—3 oz. 43*s.*—2 oz. and 1½ oz. 36*s.*—1 oz. 30*s.*—half oz. 24*s.*——The London Glassmen allow 10 per Cent, ready money.——The Manufacturers in the Country, where all Phials are made, allow 27½ discount, at three months credit, (carriage free,) to London.

Prices of second-hand Phials, cleaned, and sorted.——8 oz. 46*s.*—6 oz. 44*s.*—4 oz. 33*s.*—3 oz. 30*s.*—2 oz. and all below this size, 23*s.*—Three months credit.

Best Leeches, 8*s.* Inferior, 4*s.* per dozen at Covent Garden Market.

LITERARY WORKS IN OR PREPARING FOR THE PRESS.

Mr. Sweeting, of Wells, is arranging a General Index to the Edinburgh Medical and Surgical Journal.

A History of the Epidemic recently prevalent at Cambridge will appear in a few days.

Mr. Geoghegan's Commentaries on the Treatment of Syphilis, and the means of insuring the successful effects of Mercury, are nearly ready for publication.

Mr. Astley Cooper is preparing for re-publication his Work on the Anatomy and Surgical Treatment of Hernia.

MONTHLY CATALOGUE OF BOOKS.

A Practical Inquiry into Disordered Respiration, &c. By R. Bree, M.D. F.R.S. Fel. of the Col. of Phy. 5th edit. with addl. Obs. 8vo. Callow.

Reflections on Fever, &c. By R. Calvert, M.D. Physician to the Forces, &c. &c. 8vo. Callow.

Researches on Pulmonary Phthisis, from the French of G. L. Bayle. By W. Barrow, M.D. 8vo. Longman and Co.

The Morbid Anatomy of the Liver, Order 1. Part II. on the Varieties of the Tubera Diffusa. By J. R. Farre, M.D.

The History of the Small Pox. By James Moore, Mem. of the Roy. Col. of Surg. Lond. &c. 8vo. Longman and Co.

Additional Reports on the Effects of a peculiar Regimen in cases of Cancer, Scrofula, Consumption, Asthma, and other Chronic Diseases. By William Lambe, M.D. 8vo. Mawman.

Sketches of Craniology. By T. Foster, Esq. F.L.S. 8vo. Baldwin.

An Essay on the Venereal Diseases which have been confounded with Syphilis. Part II. By R. Carmichael, M.R.I.A. President of the Roy. Col. of Surg. Ireland, &c. &c. 4to. Longman and Co.

INDEX INDICATORIUS.

NOTICE OF THE BILL FOR THE BETTER REGULATION OF THE PRACTICE OF APOTHECARIES.---We have to state that this measure has passed the House of Commons, has been twice read in the House of Peers, and has now probably been read a third time. In our next Number we hope to announce that it has received all the forms necessary to constitute a Statute Law. We shall, of course, present a copy of it to our Readers.

Communications are received from Dr. Bartley, Dr. Horsley, Mr. Stevenson, Mr. Gaitskell, Mr. Watson, Mr. Sandell, Ωδινοβοηθος, *&c.*

It was the intention of the EDITORS *to have given with this Number a description and engraved Plans of the* STEAM APPARATUS *for Pharmaceutical Operations, lately erected in the Laboratories of* APOTHECARIES' HALL; *but the Plates could not be completed in sufficient time; they will therefore appear with the next Number.*

If cases occur of which Drawings are desired, the EDITORS *will at all times be happy to defray the expence of making them, and of having them afterwards engraved in the best manner for publication in the* REPOSITORY.

The INDEX, CONTENTS, *and* TITLE-PAGE *of the* THIRD, *will, as usual, be ready for delivery with the First Number of the succeeding Volume; an arrangement that must always be followed, from the impossibility of making them correct to publish with the current Volume.*

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CORRIGENDA.

Page 54 line 17, *after* from *insert* our
78 line 7, *for* Worcester *read* Andover.
86 line 14, *for* Cynache *read* Cynanche
206 line 35, *for* Olei Menth. p.p. ℈iv. *read* Ol. Cajeputi ℈i.
360 line 3 *from bottom*, *for* exist *read* exists
365 line 3, *for* up *read* here
370 line 18, *dele the following*— " and to strengthen his opinion transmitted me the following information"
386 and 387 *in notis*, for *Poissons* read *Poisons*
432 line 9 *from bottom and bottom line*, *for* Dupuytron *read* Dupuytren
471 line 15, *for* he may justly conclude *read* it may be justly concluded
473 line 28, *for* inherent *read* ingenite
475 line 2 *in nota*, *for* Tracts *read* Facts
524 line 19 *from bottom*, *for* Southward *read* Eastward
529 line 8, *after* character *add* than

In Register of Diseases for February, pp. 261, 262, arrange the figures for Deaths one line higher.